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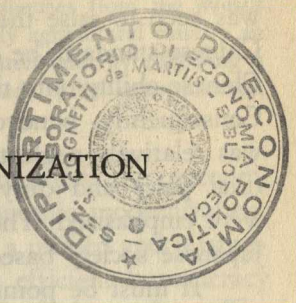

THE JAPANESE ROAD TO MODERNIZATION

by
MIHSSEN KADHIM *

Japan's area is small (142,726 sq. miles) and its natural resource base is meager. Its meteoric rise from the rather isolated feudal state prior to the Meiji Restoration in 1868 to its present status of a leading modern nation with a preeminent economy gives development economists food for thought.

This article proffers a chronological interpretation of the Japanese road to modernization focusing on the economic forces unleashed in the Meiji era and their subsequent evolution. It concludes with some critical remarks on the nexus between culture and the economy with reference to Japan.

1. *The Preconditions Phase*

The preconditions for sustained economic growth and modernization have gradually evolved throughout Tokugawa Japan, 1603-1868, and perhaps much earlier. Morishima traces back the beliefs, customs, ways of living, ideas and systems of thought of modern Japan to as early as the Taika Reform of 604 (Morishima, 1982, pp. 1-51). The first great Japanese statesman, Shotoku Taishi (573-621) attempted to bridge the gap between his country's culture and the then superior culture of China. Chinese culture was based on Confucianism which emphasized such virtues as benevolence, justice, ceremony, knowledge, faith, filial piety, harmony, bravery, and loyalty. However, the Japanese reinterpreted these concepts and changed their relative importance to suit their needs. Thus, if certain elements of

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Chinese Confucianism were deemed unsuitable or undesirable, they were either entirely discarded or drastically reformulated. "Although Shotoku was keen to raise the level of education of the Japanese people up to the Chinese standard, he did not accept everything Chinese. He wanted to graft Chinese ability onto the stock of Japanese spirit" (Morishima, 1982, p. 23). Consequently, benevolence, the central virtue of Chinese Confucianism, was relatively neglected in Japan and instead loyalty, in conjunction with filial piety and duty to one's seniors, formed a trinity of values that were emphasized. These values are reflected in the hierarchic structure of Japanese society based on authority, blood ties and age.

It must be pointed out that Confucianism as a system of thought is rationalistic and intellectual. It rejects mysticism and magic and views morality not in terms of following the commandments of an omniscient transcendent being but in the extension of the natural human affection found within the family to non-family members and complete strangers alike. The Japanese, being ethical though non-religious by nature, were therefore receptive to Confucian thoughts albeit after modifying them to suit their needs. The Tokugawa Bakufu government promoted Confucian education during the long period of isolation of over two centuries, 1639-1859. The stress on education, the intellect, and rationality embedded in Confucianism proved of immense service in moulding the Japanese character and in the emergence of an efficient and honest bureaucracy.

The isolationist policy of the Tokugawa government was instrumental in other ways as well in preparing the ground for the Meiji modernization drive. First, Japan became a unified country run by an efficient and honest feudal bureaucracy that preserved peace and stability for over 200 years. The alternate attendance system introduced in 1635 was designed to tighten the central government's control over the provincial feudal lords. It required these lords to maintain separate residences, one at their fiefs and one at the capital (Edo, present Tokyo) and to spend part of every year or every other year at their residence in the capital where their families were permanently kept as hostages to the Bakufu government. Two unintended yet from the perspective of future modernization extremely vital consequences of this system were: the standardization of language, social rules, habits and customs in the various provinces on the one hand and on the other hand the development of castle towns in the provinces, and markets and relay-station communities along the multitude of highways that were opened to connect the provinces with the capital.

Second, isolation functioned as an ideal means of protection for Japan's handicraft manufacturing industries. Morishima (1982) observes that:

> The relative ease with which the Meiji government succeeded in industrializing Japan was due in part ... to the preservation of handicraft skills throughout the Tokugawa period. In order to protect Japan's craft industries from the West's export offensive and to prevent Japan's becoming a purely agricultural country an appropriate protective trade policy had to be implemented, and by following a policy of national seclusion the Tokugawa Bakufu had, quite unconsciously, implemented a perfect protective trade policy (p. 60).

In sum the Tokugawa period of isolation served to satisfy the preconditions necessary for the Meiji regime's drive for economic modernization. Japan emerged on the eve of the Meiji Restoration as a unified and relatively urbanized country with a government run by an efficient bureaucracy consisting of a feudal samurai class moulded in Confucian values. The educational levels of its citizens were high with some formal schooling available to about half the male population. Furthermore, the country managed to maintain a work force possessing relatively advanced handicraft skills.

True, the technology being applied was still rudimentary but the capability to introduce modern technology was created. This gap between the actual technology being applied and the existent capability of borrowing and absorbing more advanced techniques is, according to some perceptive economists, a fundamental factor in Japan's success (Ohkawa and Rosovsky, 1973, p. 8).

II. *The Meiji Era*

The Meiji era lasted 45 years, 1868-1912. It began in 1867-1868 with the restoration of the imperial rule and the abolition of the feudal Bakufu government. It was a revolution by the elite in response to external pressure created by the huge technological gap then existing between the West and Japan (Morishima, 1982, p. 58-90). This elite consisted in the main of low-ranking samurai who were ardent nationalists intent on creating a modern and rich Japan on the basis of indigenous values. Hence the mottoes: Rich Country, Strong Army; Japanese Spirit and Western Technology. The new government embarked on reforming the social and political system by proclaiming the Charter of Oath that cancelled the feudal privileges of the samurai class and guaranteed personal and economic freedom and called for the establishment of deliberative assemblies, universal conscription and a system of university education in 1870 and of general education in 1872 (Hirschmeier and Yui, 1975, pp. 73-79).

The Meiji leaders were not interested in political and social reforms per se. Rather, they viewed them as necessary means for the establishment of a new economic order founded on the extensive application of western technology. In other words, they correctly realized that political and social reforms must proceed hand in glove with the introduction of modern technology and industrialization. The government however lacked a clearly defined economic modernization plan and its short-term economic policies were rather experimental. Nonetheless, it soon became apparent that industrial entrepreneurs, those who had to bear the burden of the new era, could not be expected to emerge from among members of the farming, artisan or merchant classes. Such men made limited demands for freedom to engage in business, were timid to carry out innovations, and the capital resources at their disposal were too insignificant for building such modern industries as railways, telegraphs, shipbuilding and steel manufacturing. The state inevitably had to step in to fill the vacuum. Hence the birth of state capitalism.

The major components of Japan's economic modernization program are perhaps five. A summary analysis of each is proffered below.

1. In order to establish a market-oriented capitalist economy on the western model, a nucleus of powerful capitalists is necessary. The bourgeois class that emerged in the later years of the Tokugawa era however was weak and concerned almost exclusively with domestic commerce not foreign trade owing to the circumstances of seclusion. Such a class "possessed neither the courage nor the spirit of adventure which was usually found among merchants of foreign trade" (Morishima, 1982, p. 85). Thus, the government, through the newly created Ministry of Industry, was forced to lead the way by investing its limited funds and resources in strategically important modern industries such as steel mills, shipbuilding, armaments and infrastructural projects including railways, telephone and telegraph communications. These pilot enterprises served several functions: they acted as a model which the private sector could emulate; they absorbed initial costs and losses which private firms could not possibly bear; they solved certain technical difficulties; and they symbolized the resolve of the government to turn Japan into a modern industrialized nation (Hirschmeier and Yui, 1975, p. 86). Soon however the direct involvement of the government in the economy ran into serious management problems that made these fledgling enterprises unable to continue operation except at a loss. Instead of continuing to subsidize these investments, the government judiciously decided to sell off most of them save the infrastructural and

armaments establishments at almost give-away prices. In this manner one of the basic prerequisites for capitalism, the existence of a capitalist class, had been fulfilled.

It is important to stress that Meiji capitalists, having owed their existence to government favor, continued afterward to seek state patronage and remained loyal and cooperative towards the government (Morishima, 1982, p. 86). Thus the foundation for harmonious partnership between business and government, which is still a hallmark of the Japanese economy, had been early laid. Many observers consider this close working relationship between business and government as a key element responsible for Japanese success (Fodella, 1989; Toba, 1981; Trezise, 1976).

Some analysts (Hirschmeier and Yui, 1975, pp. 88, 146) persuasively argue that the involvement of the government as an industrial investor must have been only temporary in intent, supplanting tariff protection which, owing to lack of tariff autonomy at the time, could not be pursued. As a latecomer and in the absence of tariff sovereignty that was fully restored only in 1910, Japan had to create its infant industries by direct state initiative and nurture them to adulthood before turning them to the private sector.

2. Industrialization requires, besides entrepreneurial initiative, capital accumulation. The Meiji government relied principally on agricultural taxation as a source of fiscal revenue. Land tax in the decade following the land tax reform of 1873 contributed between 80 and 66 percent of total fiscal revenue. Japan thus fits into the classic development model whereby agriculture bears the major initial burden of industrialization (Hirschmeier and Yui, 1975, p. 83). It is important to observe in passing that the contribution of agriculture to the process of industrialization was not confined to the provision of a large proportion of the total fiscal revenue but manifested itself in other classic ways as well. Tea and raw silk were the principal earners of foreign exchange which was the limiting constraint on the importation of the much-needed capital goods and foreign know-how and expertise. Japanese agriculture, which was characterized by high labor intensity, not only fed the population that was growing at about 1 percent annually, but also prevented the emergence of widespread unemployment. Population growth and the possibility of tapping agricultural labor increased the elasticity of labor supply and thus permitted the absorption of labor into the growing industrial sector without significant wage increases.

Capital accumulation proceeded also via other classical means, notably through inflation, the development of modern banking and insurance and the creation of a number of specialized banks, and the promotion of a

system of postal saving. Inflation made a contribution to forced savings; the banks, notably the specialized ones, played important roles as large-scale, long-term suppliers of credit; and the Postal Savings System was effective in syphoning small savings and making them available to the government (Hirschmeier and Yui, 1975, pp. 90-1).

Most analysts ascribe to the Japanese ethic of hard work and frugality the success of the government in its campaign to promote capital accumulation and to earmark the resources thus released for industrial investment (Morishima, 1982, p. 86; Hirschmeier and Yui, 1975, p. 131; Toba, 1981, p. 84). They draw a parallel between the puritan ethics in the West as interpreted by Max Weber and the ethics of Japanese Confucianism that elevated frugality to the status of noble behavior.

3. Japan's economic development and modernization program was executed with minimal recourse to foreign borrowing. Although a large number of western technicians and scientists were invited to Japan, foreign capital was not welcomed (Toba, 1981, p. 85). The foreign exchange necessary for Japan's modernization program was domestically generated initially through increasing the volume of traditional exports, tea and raw silk, and later by adding cotton textiles and a variety of other exports. Japan realized from the very beginning that, owing to her poor natural resource base, export promotion is *sine qua non* for her economic development. Thus export promotion loomed large in the thinking of the policymakers in framing industrial policies.

In contrast to some presently advanced countries such as the United States which witnessed a heavy inflow of foreign capital during the nineteenth century, Japan was extremely self-reliant in pursuing her industrialization.

4. The Japanese industrialization program exhibited clearly the duality feature so common in the developing world today. A relatively few and large enterprises, later become known as *zaibatsu*, dominated the modern industrial sector. Most of these enterprises owed their existence to the government either directly through the aforementioned decision to turn over state-owned firms to the private sector or indirectly via the government's extensive subsidies and guidance. The leaders of these firms were men of exceptional ability and a keen sense of realism. They concentrated on long-term development and growth and not short-term profits. They understood that "they had to lay first the foundations for a sound private economy before reaping its fruits both for themselves in terms of profits,

and for Japan in terms of an overall viable industry" (Hirschmeier and Yui, 1975, pp. 99).

Duality in the inchoate phase of industrialization is hardly avoidable since a developing country cannot afford to spread thinly its scarce inputs of capital, managerial talents and modern labor skills. It is only when the modern sector acquires an enclave character and thus fails to generate the spread effects desired that duality becomes a serious problem. Fortunately for Japan this was not the case (Hirschmeier and Yui, 1975, pp. 102-3). However, the sizable gap between the relatively few large-scale enterprises and the multitude of small firms in terms of productivity, the quality of technology employed, and wage levels has not been an ephemeral phenomenon but has persisted into the present (Morishima, 1982, pp. 165-174). Other structural imbalances have also marked Japan's modernization drive, notably wage disparity between male and female workers. Even now Japanese women on average earn about 52 percent of their male counterparts (Lauria, 1989, p. 1144). It is noteworthy however to observe that these structural imbalances failed to generate significant social tension and disharmony in the Japanese economy and society such as would be expected of them in a western context. The Japanese system of values with its emphasis on the vertical order, the subordination of women, submission to authority and functional role expectation – all elements of Japanese Confucian ethics – helped stymie the voices of dissent (Morishima, 1982, p. 98; Lauria, 1989, p. 1147).

5. The Meiji leaders, both business leaders as well as intellectuals, created an ideology of progress and worked for its dissemination among the people through diverse measures, notably the creation of a general 'mood and enthusiasm' for things western as well as the establishment of general education and a generous overseas study program for young Japanese.

A decree issued in 1872 made general education mandatory for all, boys and girls, from age 6 to 13, and required the cost of education to be borne privately. Within a relatively short span of time enrollment went up initially from 28 percent of the pertinent age group to 40 percent in 1877 and to 96 percent in 1896 (Hirschmeier and Yui, 1975, pp. 77). The curricula of the grade school emphasized not only the three R's but also western-style education. Secondary education varied in style and included apart from the general high school an increasing number of technical and vocational schools both public and private.

The system of university education was initiated in 1870 and provided for the gradual establishment of eight universities. University students were

highly regarded and received top positions upon graduation. Those returning from overseas study were accorded special status and were honored with the title *yoko-gaeri* (returnee from the West). They were appointed to positions of responsibility where they could make significant contributions to Japan's efforts to modernize. It is noteworthy to observe that in contrast with students of many late industrializing nations studying in the West, Japanese students abroad did not choose to stay there but returned to Japan with a sense of purpose and mission. Without doubt their decision to return home reflected not only their patriotism and strong identification with their culture but also the excellent career opportunities and prestige awaiting them upon return.

The diffusion of knowledge and modern education among the population was in the long term perhaps the single most important measure that contributed to economic progress and modernization. The new age required the capacity to assimilate new techniques and ideas and to adapt them to local conditions, and the new school system proved able to meet these requirements. The emphasis on human resources development was from the start the cornerstone of Japanese endeavors to build a modern economy. The following quote from the First Economic White Book 1884 (given in Hirschmeier and Yui, 1975) hints at this idea.

> Which requirements should be considered as most important in the present efforts of the government in building Japanese industries? It can be neither capital nor laws and regulations because both are dead things in themselves and totally ineffective. The spirit sets both capital and regulations in motion... Hence, if we assign weights to these three factors with respect to their effectiveness, the spirit should be assigned five parts, laws and regulations four, and capital no more than one part (pp. 76-7).

The success of the new educational policy is traceable to the fact that the Japanese had already, "as a result of the samurai being the models for all, inherited a high esteem for eduction which, rather than birth privileges, was to become the distinctive mark of the elite" (Hirschmeier and Yui, 1975, p. 77). The emphasis placed on education was in fact based on a firmly established Confucian tradition of reverence for learning and knowledge in general. And the Japanese family typically played an important role in furthering the education of the children. Even today this role has not diminished in importance as can be seen from the Japanese expression *Kyoiku-mama* which refers to a mother totally dedicated to following her children's progress in school; she assists her children with their homework and urges them to learn and participate in school activities. "This type of mother is fully aware of the fundamental importance of education in

Japanese society and is determined to help her children in the 'rat race' which is competitive even from the child's earliest years" (Lauria, 1989, p. 1143).

Literacy, education and vocational skills are indispensable requirements for economic growth and modernization. They put down deep roots in Meiji Japan, owing to the existing favorable social attitudes towards them. Furthermore, it was possible to disseminate them far and wide among the population because people had been trained for ages to work hard and to be loyal and submissive to their leaders. Once the leaders had adopted the ideology of progress that glorified literacy, education, and modern skills, it was natural for the people to toe the official line, to fulfill the goals of their leaders. Group pressure leaves little room for the individual to deviate from socially accepted behavior. To act independently is considered a sin. Evidently such an attitude may be harnessed for good as well as nefarious purposes. The Meiji government knew how to use it effectively to help the process of industrialization and modernization. In the words of Hirschmeier and Yui (1975):

> The decisive thing about the ethic of functional role expectation in the early stage of Japan's industrialization is that it was flexible, could be used for the purposes decided from above. Once the official line was given, and the public followed this line, expected behavior could be enforced by sheer pressure of expectation which nobody could escape (p. 131).

In sum the success of the Meiji government educational policy may be attributed in part to the soundness of the educational measures per se, and in part to the concomitant policy of industrialization that called for and used the skills produced by the new educational institutions, but above all to the pliability and receptivity of the social attitudes, customs, values, beliefs, and behavior pattern of the Japanese people.

III. *Post-Meiji Development: A Synoptic Overview*

W.W. Rostow (1968, p. 39) defines the take-off as requiring three related conditions: a rise in the investment rate to over 10 percent of national income; the emergence of a sizable modern industrial sector with a high rate of growth; and the existence or rapid emergence of an appropriate political, social and institutional framework that effectively exploits the unfolding growth impulses and thus gives growth an on-going character. According to Rostow and some Japanese scholars, the Japanese economy

completed the take-off during 1878-1900 (Rostow, 1968, p. 38; Morishima, 1982, p. 87). Subsequently, economic growth became institutionalized, industrialization fully took hold, and large-scale industries matured and proliferated. We believe that Japan's economic development history since 1900 may be divided into two somewhat overlapping phases, pre- and post-World War II. The division is not founded so much on economic criteria per se, although it is possible to discern certain changes in the economy in each period. Yet these changes are dwarfed by the elements of continuity. Rather, the division is based on the redefinition of the political aspiration which had been always the basic driving force behind modernization from its very inception. The impulse to modernize had been from the start reactive nationalism. But this nationalism had been rather crude and fanatical. It had rested on the chauvinistic myth known as *Shinkoku shugi* or the 'land of gods' doctrine that maintains "that Japan, being ruled by the Heavenly Emperor whose ancestors were the gods who created the universe, should be superior to all other countries" (Morishima, 1982, p. 53).

By 1920 the new capitalist order had made Japan a relatively rich and powerful state. The exceptionally rapid pace of growth however created serious imbalances and acute tensions in the economy and society. The ensuing economic and social problems were the focus of critics among whom the army assumed an increasingly prominent role. In the early 1930s, the army eventually succeeded in dominating the civilian government. From then on economic efforts were in the service of the military machine. The aggrandizement of Japan thus took, in tune with the time, a militaristic and imperialistic path. In other words, the army wanted to solve domestic problems and achieve prosperity for Japan through the pursuit of imperialism abroad.

Japan emerged from World War II shattered and defeated. The resourceful Japanese were quick however to pick up the pieces and to reorganize their economy and society, and in a matter of a few years, admittedly helped by external developments, they managed to resume their disciplined march to overtake the West. The occupation formally ended with the signing of the San Francisco Peace Treaty in 1951. However, already in 1950 with the outbreak of the Korean War a fresh *Kamikazi* (divine wind) had begun to blow once more in Japan's favor [1]. This post-war phase resembled very much the early Meiji period: "There was an enthusiastic turn towards the West, and its result was again acceptance of industrialization as a national

[1] In the seventh century, a typhoon, later called *Kamikazi*, literally a wind sent by God, hit the invading fleet of the Mongolians and sunk most of their ships, thus saving Japan from the menace of foreign intruders (MORISHIMA, 1982, pp. 39, 164).

goal. And again, the role of the government as promoter stands out, and the support, and acclaim, centered on the large enterprises" (Hirschmeier and Yui, 1975, p. 312). Thus, the aggrandizement of Japan was and continued to be the propellent motive; World War II however proved that prosperity could not be accomplished via military force and that Japan was destined to give up the goal of becoming a world military power; in consequence the aggrandizement of Japan had to be redefined to exclude military power. Hence, the Japanese in the post-war phase turned singlemindedly to economics and successfully put Japan at the forefront of the highly industrialized nations of the world.

Focusing on the economy in the pre-war phase, we may identify three new interrelated developments that were and still are associated with Japan's superior growth performance. These are the *nenko seido* system of labor management, the *zaibatsu* phenomenon and the establishment of *new zaibatsu*, and finally the emergence of a professional managerial class composed of college graduates. At the risk of painting with a broad brush, we offer the following few observations on these developments.

At the end of the Meiji period and as a result of decades of sustained rapid economic growth, labor became scarce. The ensuing tightness of the labor market pushed wages upward and firms found it increasingly problematic to retain their labor force. Management of large enterprises thus faced three conflicting objectives: containment of rising labor cost, maintenance of industrial peace, and strengthening of commitment to work. It responded with the extension of the coverage of the paternalistic *nenko seido* system from employees only to workers as well (Cole, 1974). The *nenko seido* system possesses several major features such as permanent employment, basic pay decided by seniority and status, company involvement in the training and schooling of its workers, non-wage remunerations designed to strengthen motivation and loyalty to the company, and a variety of welfare programs that aim at creating a self-sufficient 'family' community within the enterprise (Cole, 1974, Hirschmeier and Yui, 1975, pp. 188-200). Evidently the system draws heavily on traditional Japanese values, attitudes, and group-oriented behavior in managing labor relations and thus is quite different from its western counterpart that emphasizes the straight cash-nexus as stimulus to work. The *nenko seido* system has been widely credited with the relative harmony that characterizes Japanese management-labor relations as well as with strong motivation and commitment and thus the high productivity of labor [2].

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[2] The *nenko seido* system is adopted by large-scale enterprises only and its coverage, as a

The second major feature characterizing the economy of prewar Japan relates to the consolidation of the economic power of the giant companies, notably the big four *zaibatsu* (Mitsui, Mitsubishi, Sumitomo, and Yasuda) and the emergence of the so-called *new zaibatsu* which grew up under the patronage of the military in connection with colonial ventures and the development of chemical and electrical industries (Hirschmeier and Yui, 1975, pp. 151-154). The organization of the *zaibatsu*, both old and new, took the form of holding companies thus permitting almost limitless expansion. These giant enterprises which initially owed their existence to government favoritism began to wield immense power and attempted to steer the government towards the promotion of their private economic interests, arguing that what is good for them cannot be otherwise for Japan.

Finally, the third important development of the pre-war period is the emergence of a new professional managerial class comprised of college graduates. In contrast to the early Meiji pioneers who had focused on the adoption of western technology almost indiscriminately and the expansion of production almost for its own sake, the new professional managers employed a scientific, rational approach to business decisions. They committed investment funds only when careful analysis of such things as location, transport costs, raw material supply, and economies of scale demonstrated the contribution of the venture to the company's overall profits. In short, their decisions were based on a distinctly long-term view of business development.

The emergence of this new managerial professional class was also accompanied by the increasing separation of ownership and control in the world of large business. The owner-family members of the enterprise were as a rule not permitted to take a large and active part in running the business; yet the new professional managers meticulously preserved the attitudes of personal loyalty to them. Furthermore, these professional businessmen managed the enormous growth of their enterprises by perfecting the reorganization of business into conglomerate concerns, thus permitting more flexibility and independent management at the individual firm level while retaining family ownership and central control by the parent enterprise.

Hirschmeier and Yui (1975) neatly summarize the multivariate characteristics of this class as follows:

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rule, is not extended to female workers. Medium and small-size firms, in contrast, recruit and manage their labor according to the forces of supply and demand in the residual labor market.

> The college graduates shared their thoroughly modern attitudes, they understood each other and judged one another and business conditions essentially in a cool economic rationality. There was a lot of clannishness involved, notably with respect to the various schools; there was a strong group consciousness; hierarchical structures were preserved, and in fact these highly rational and modern men used traditional ethics and values for very rational purposes, just as they themselves stayed within the realm of basic loyalty to their employers. But clearly, they were a modern group in a quite different sense from the founders of the enterprises into which they now came and which they modernized (p. 165).

Turning to the post-war phase we observe the following developments. First, the democratization of the political process and the attempt to restructure the economy and society within the framework of democracy. Furthermore, pacifism was declared the official policy of the government. The government also began the disbandment of the armed forces and the dispersion of economic power. Soon after the *zaibatsu* were dissolved however, new *zaibatsu*-like formations began to surface aided by external developments and paradoxically by the government itself through the sale of the giant army and navy facilities to the private sector [3]. Analysts liken the turning over of military assets to private hands to the sale of government enterprises in the early Meiji period with regard to its beneficial impact on the subsequent development of the Japanese economy. "Many of the conglomerates which acted as bases for Japan's high rate of economic growth had succeeded to army or navy facilities; former naval arsenals were revived as shipyards and steelworks, and prospered" (Morishima, 1982, p. 164).

Second, the post-war period witnessed the emergence of three forms of enterprise groupings: the reappearance of some old *zaibatsu*, conglomerate-type groupings, and interdependent industrial groupings based on forward and backward linkages and subcontracting relationships. These groupings made significant contribution to the growth of the economy primarily by giving a spur to innovational activities and intense competition among groups while concomitantly maintaining solidarity and cohesiveness within the group. Hirschmeier and Yui (1975) observe:

> The tendency to form groupings must certainly be counted among the most typical phenomena of Japan's post-war growth. On the one hand, individual firms find support and protection within the group; on the other, the solidarity among the group members tends to provide a strong motivation toward fierce competition

[3] The Korean War helped shape a new relationship between Japan and the United States; America's interest shifted from rebuilding the Japanese economy on the basis of competition and diffused ownership and control to provision of assistance to Japan for the purpose of playing the role of a garrison against the advance of communism (MORISHIMA, 1982, p. 162f.).

> among the groups; and finally, groupings are often able to jointly tackle problems which individual firms on their own would be unable to do (p. 269).

Third, four leading business organizations came into being: The Federation of Economic Organizations, The Japan Federation of Employers' Associations, The Japanese Chamber of Commerce and Industry, and The Japan Committee for Economic Development. To these organizations a great deal of the efficiency and coordination of Japanese business must be credited. They also exercised tremendous pressure on the government in the defense and promotion of business interests. Their lobbying methods however were not confrontational but in a true Japanese tradition consensus seeking. They may thus be viewed as part "of a larger picture of group-relatedness that is deeply imbedded in the traditional (Japanese) value system" (Hirschmeier and Yui, 1975, p. 279).

Fourth, although the *nenko seido* system of personnel management continued in post-war Japan to regulate labor relations in large enterprises, some of its aspects did undergo significant changes that contributed greatly to the system's effectiveness. The aspects exhibiting change are summarized by Hirschmeier and Yui (1975) as follows:

> the unions as enterprise unions representing all employees together; the welfare and other provisions having become a matter of democratic rights, not handed down from above by a paternalistic employer; the basic loyalty to the whole firm, as constituted by the collective attitude of all employees, working in the sense of collective self-interest (p. 283).

Fifth, management in large companies has devolved almost exclusively to professional executives holding college degrees. As non-capitalist professionals, these managers made growth and not profit their primary concern. For them the most important task was "to keep harmony, to let everyone feel that he is part of the decision-making process". Having gradually risen from the ranks of the firm's own employees, these managers envisaged themselves "as the pinnacle of the employee pyramid rather than representative of capitalist interest" (Hirschmeier and Yui, 1975, p. 25).

These professional managers displayed tremendous eagerness to learn and interest to apply modern management techniques to the problems facing them in the new complex environment. Their strategy in managing industrial relations evolved around four basic premises: the mutual acceptance of labor and management as long-lasting partners, a growing commitment to investment in human resources, improving the quality of working life and

sharing productivity gains, and finally, meeting world economic and technological challenges (Tekezawa, 1988).

In conclusion, it appears that aside from the important shift from militarism to democracy and pacifism, the developments outlined above in the two phases of post-Meiji Japan, pre and post World War II, evince considerable overlapping and no sharp break. In particular, big business run by a highly professional managerial class continued to dominate the economic landscape and a strong, rather harmonious and cooperative business-government relationship continued to prevail. Admittedly the extent and details of government involvement in the economy in each period did, in response to changes in the environment, exhibit some variation, yet the basic role and philosophy of the government with respect to the promotion and guidance of private business, especially large enterprises, endured. Given this continuity, we are inclined to view the post-war phase as a natural extension of past developments – a phase in which trends began earlier intensified, matured, and came to fruition.

IV. *Culture and the Economy*

Western social scientists in their efforts to understand the nexus between culture and the economy have developed a number of pattern variables believed to be necessary for modernization and rapid economic growth (Glazer, 1976). The pattern variables singled out as most important relate to the character of human interaction, the criteria for evaluating human beings, the nature of human relations, and the orientation of individuals. Extrapolating from western social evolution and considering the pattern variables that characterize modern societies, western sociologists maintain that rapid economic growth requires that human interactions become increasingly based on 'universalistic' rather than 'particularistic' standards; that human beings be judged according to ' achievement' rather than 'ascription'; that human relations become 'specific' rather than 'diffuse' and 'affectively neutral' rather than 'affective'; and finally that the individual become self oriented rather than collectivity oriented.

Examining these pattern variables in the Japanese context, a striking conclusion emerges: Japan may only with hesitation be assigned to the 'universalistic' rather than the 'particularistic' standard and to the 'achievement' rather than the 'ascription' pole. With respect to the remaining pattern variables however Japan ends up unequivocally in the wrong box (Glazer, 1976, pp. 819-20; Rokumoto, 1981, pp. 214-222).

The Japanese development experience since the Meiji Restoration has been effected through a symbiosis of western technology and traditional Japanese values and ethos. Without denying the importance of the distinct mix of the pattern variables in the case at hand, Japan appears to lend support to the thesis that traditional values need not be incompatible with modernization. If properly harnessed, these same values may in fact become powerful levers towards economic growth. Hence the economic history of Japan since the Meiji era casts doubt on the universal validity of the pattern variables hypothesis.

Nonetheless, we must not overlook the fact that traditional values in contemporary Japan are undergoing a process of steady erosion especially among the younger and better educated segments of the population (Glazer, 1976, pp. 893-4). Consumerism and the pursuit of individual economic goals irrespective of social expectations are gaining currency, and the system of industrial relations is being significantly revised in response to the need to 'interact with the outer world' (Tekezawa, 1988, p. 75). In a dialectical vein, Hirschmeier and Yui (1975) cogently argue that:

> The very success of development tends to wash out the original cultural elements; social relations, and other aspects of modern society tend to become the same all over the world, in the advanced countries (p. 314).

Hence, the pattern variables hypothesis may be accepted if it is interpreted as implying a convergence thesis. Evidence from Japan however contradicts it if it is construed in its original form which suggests the incompatibility of traditional values with modern economic growth.

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LA VIA GIAPPONESE ALLA MODERNIZZAZIONE

La superficie del Giappone è piccola (142,726 miglia quadrate) e le sue risorse naturali sono molto scarse. La sua astronomica ascesa dallo stato feudale piuttosto isolato precedente alla Restaurazione Meiji nel 1868 alla sua condizione attuale di nazione moderna leader con una fortissima economia è materia di riflessione per gli economisti dello sviluppo.

Questo articolo avanza una interpretazione cronologica della via giapponese alla modernizzazione soffermandosi in particolare sulle forze economiche che si svilupparono nell'era Meiji e sulla loro successiva evoluzione. Conclude con qualche osservazione critica sul nesso tra cultura ed economia riferita al caso giapponese.

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I FATTORI ALLA BASE DELLA COMPETITIVITÀ GIAPPONESE

di
GIANNI FODELLA *

1. *L'ascesa economica del Giappone*

Ad un osservatore superficiale il sistema economico giapponese – molto diverso da quello americano e anche da quello inglese – non sembra troppo dissimile dal nostro.

La dovizia di piccole e medie imprese e l'alta natalità che ad essa si accompagna testimonia, come da noi, la diffusa imprenditorialità che caratterizza entrambe le economie; gli elevati tassi di risparmio e la rapida crescita della produttività sono indici della laboriosità di entrambi i popoli; la scarsità di terra coltivabile, la pressoché assoluta mancanza di materie prime e fonti energetiche essenziali non ha impedito ad entrambi i sistemi economici di divenire, nei pochi decenni successivi alla ricostruzione dalle rovine della guerra, due fra i piú importanti sistemi trasformatori del mondo.

Nel caso del Giappone la sua capacità manifatturiera ne ha fatto il secondo paese industriale del mondo dopo gli Stati Uniti e il terzo esportatore mondiale dopo Stati Uniti e Germania.

Anche se non bisogna dimenticare che il Giappone era già divenuto una potenza mondiale nei pochi decenni intercorsi tra l'apertura del paese successiva alla visita delle navi americane del commodoro Perry (1853-54) e le guerre vittoriose del 1894-95 (contro la Cina), del 1904-05 (contro la Russia) e del 1914-18 (contro gli imperi centrali a fianco delle potenze vincitrici della prima guerra mondiale), lo sviluppo della sua economia a partire dagli anni Cinquanta non ha avuto eguali per intensità e durata. I saggi medi di crescita dell'economia sono stati circa doppi rispetto a quelli

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degli altri paesi membri dell'OCSE e il Giappone ha superato le crisi economiche legate alla congiuntura internazionale piú facilmente e con minori conseguenze della maggior parte degli altri paesi industrializzati ad economia di mercato. Il Giappone si è cosí rivelato un sistema economico che ha continuato a dar prova di una grande vitalità non facile da spiegare con i canoni che ci sono abituali.

Negli anni Cinquanta tendevamo a ignorarlo, ritenendolo un paese trascurabile, ridotto per sempre dalla sconfitta a un ruolo subalterno e destinato a copiare le cose fatte da altri.

Negli anni Sessanta consideravamo la sua rapida crescita economica esclusivamente legata ai bassi salari, come nel periodo tra le due guerre, e destinata quindi a una breve stagione perché fondata su un "dumping sociale" che non poteva durare a lungo in un paese democratico.

Negli anni Settanta, quando i tassi di crescita si riducevano pur rimanendo piú alti di quelli degli altri paesi OCSE, ci aspettavamo che i giapponesi si accorgessero che era venuto anche per loro il momento di godersi la vita. Invece i salari crescevano, e le condizioni di vita miglioravano, ma il Giappone non cessava di essere sempre piú competitivo nonostante le continue rivalutazioni dello yen. Veniva cosí avanzata l'ipotesi dell'alleanza tra governo e imprese (*Japan Inc.*) la cui coerenza si affievoliva con il declino dell'influenza della mano pubblica nella vita economica.

Negli anni Ottanta sembravamo aver rinunciato a ogni tipo di spiegazione e aver deciso che il Giappone era imbattibile. Iniziava cosí la gara per farselo alleato. Mentre il Congresso americano emanava norme minacciose pensate per fermare il Giappone (e le NIE o economie di nuova industrializzazione soprattutto asiatiche), e la CEE guardava preoccupata al proprio disavanzo commerciale nei suoi confronti, le imprese occidentali piú innovative affidavano a società giapponesi la produzione e la commercializzazione di prodotti nuovi che non si sentivano in grado di imporre sul mercato da sole, rivelando cosí al mondo che le imprese giapponesi avevano o si erano impadronite di un "potere di mercato" che le imprese non giapponesi sembravano non avere, o non avere piú.

Alla base di questi atteggiamenti cosí diversi e mutevoli vi era e vi è un unico denominatore comune: una analisi affrettata, basata su valutazioni grossolane e stereotipi, e in alcuni casi sostanzialmente errata, della situazione del Giappone. Analizzare correttamente i punti di forza della competitività giapponese non è soltanto un problema accademico, ma è la base stessa sulla quale poter edificare una strategia di risposta adeguata.

Dalla formulazione di questa strategia siamo ancora lontani sia in Europa sia in America. La ragione principale è forse dovuta al fatto che continuia-

mo a essere prigionieri delle ideologie economiche ottocentesche. Presupposto su cui si fonda il liberoscambismo infatti è che la dotazione dei fattori caratterizzi ogni sistema economico al punto da fare di ciascuno un *unicum*, ma nello stesso tempo, nell'ottica della teoria dei vantaggi comparati, tale presupposto pone su un piano di parità tutti i sistemi economici e le loro imprese, che si ritiene competano quindi ad armi pari nell'arena del mercato.

Tali assunti sono contraddetti da una realtà che mostra invece come i vantaggi, lungi dal derivare soltanto dalla dotazione dei fattori, possano essere migliorati o addirittura interamente costruiti mediante politiche agricole, industriali o commerciali appropriate. L'attenzione dovrebbe quindi spostarsi sui fattori che consentono, in misura diversa nei vari sistemi economici, di costruire i vantaggi di cui mancano in tutto o in parte, riuscendo cosí talvolta a prevalere su sistemi economici caratterizzati dalla eguale o addirittura piú generosa dotazione di fattori produttivi.

Tutti gli economisti concordano nel ritenere che siano essenziali allo sviluppo e alla crescita dell'economia l'abbondante disponibilità di risorse umane e materiali (*hardware*), di tecnologia e di capacità manageriali (*software*). Gli elementi che compongono *hardware* e *software*, pure necessari, non sono però sufficienti a determinare la crescita economica e per essere pienamente utilizzati dal sistema ai fini dello sviluppo dell'economia hanno bisogno di istituzioni, norme e comportamenti appropriati e comunque tali da favorire e non ostacolare lo sviluppo dell'economia.

L'insieme delle istituzioni, delle regole o norme che le definiscono, dei comportamenti concreti degli agenti economici e delle relazioni e interazioni reciproche fra questi elementi costituisce il terzo pilastro (*orgware*) su cui poggia il sistema economico.

La qualità dell'*orgware* è funzione diretta della piú o meno buona *performance* economica del sistema, poiché la stessa quantità di risorse (umane, fisiche, finanziarie) può essere usata con diversi gradi di efficienza, mentre la tecnologia e le capacità manageriali hanno modo di essere utilizzate in maniera diversa in contesti istituzionali e comportamentali differenti.

Anche se non intendo qui affrontare la complessa questione della misurazione della qualità dell'*orgware*, vorrei però almeno sottolineare che il problema non è tanto quello di verificare – ad esempio – se la ricetta migliore per il commercio internazionale sia il protezionismo o il libero scambismo, quanto piuttosto di esaminare da vicino se è la qualità di quel coacervo di elementi che abbiamo chiamato *orgware* a consentire un uso piú o meno efficiente di fattori produttivi e risorse raggruppati sotto le etichette *hardware* e *software*, in un contesto protezionista o libero scambista a seconda che sia ritenuto piú conveniente l'uno o l'altro ai fini della crescita

economica. Cosí sembra essere nel caso del Giappone, dove l'*orgware* (l'insieme delle istituzioni, norme che le definiscono e comportamenti concreti) che ne caratterizza il sistema economico, è il fattore alla cui alta qualità va ascritto l'atteggiamento dell'impresa giapponese nei confronti degli obiettivi di breve, medio e lungo periodo, e il suo comportamento nei confronti delle altre imprese appartenenti allo stesso sistema economico. Ogni qualvolta nasce un conflitto tra breve e lungo periodo l'impresa giapponese tende a risolverlo a favore del lungo, quella occidentale a favore del breve. Quando nasce un conflitto tra impresa e sistema economico in Giappone si privilegiano le ragioni del sistema, in Occidente quelle dell'impresa. Esiste una spiegazione economica di questi fatti, o dobbiamo invece ritenere che soltanto nelle differenti radici culturali del sistema economico giapponese vada cercata la spiegazione di questi comportamenti che sono molto probabilmente alla base della superiore *performance* economica di quel paese? La risposta a questa domanda è molto rilevante per noi europei poiché implica che ci si possa o meno ispirare all'esempio giapponese se non per imitare o adottare le politiche intraprese, per lo meno al fine di *ispirarsene* utilmente.

Non voglio tuttavia rispondere subito e in modo semplicistico a una domanda tanto importante. Ma per contribuire a dare una risposta convincente vorrei soffermarmi su alcuni istituti, norme che li definiscono e comportamenti concreti degli agenti economici che possono avere qualche utilità al fine che mi sono proposto.

Le imprese, ovunque nel mondo, perseguono il profitto avendo cura di conseguirlo per l'intera durata della vita dell'impresa, che può trascendere la vita umana e continuare attraverso le generazioni come mostrano numerosi esempi di imprese addirittura plurisecolari. La prassi vigente nel sistema economico è la cornice nella quale l'impresa si muove e ne delimita i gradi di libertà.

In tutti i sistemi economici le relazioni fra imprese sono regolate da contratti e da usi. Tuttavia nel caso giapponese gli usi tendono ad avere un peso maggiore dei contratti formali. Si dice perciò giustamente che le *relazioni di tipo contrattuale* sono integrate e talvolta sostituite da *relazioni di tipo fiduciario* (Dore, 1987). Le relazioni di tipo fiduciario implicano che la violazione sostanziale (anche se non formale) delle clausole del contratto venga vista dalla comunità delle imprese che fanno parte del sistema economico come riprovevole. Non è quindi nell'interesse di medio/lungo periodo dell'impresa far ricorso a pratiche che, pur favorendola nel breve periodo, la penalizzano nell'ambito di un orizzonte temporale piú ampio. Infatti comportamenti che danno origine a vantaggi in un'ottica di mercato, e quindi di un orizzonte temporale di breve periodo, possono essere visti come inaccettabili

dalla prassi dominante e provocare nei confronti dell'impresa che li pratica un diffuso senso di disagio che può giungere all'avversione e quindi all'ostracismo.

Concezioni del mondo cosí diverse da quelle alle quali siamo abituati in Occidente richiedono probabilmente il radicale mutamento delle "regole del gioco". Di quelle regole che noi abbiamo stabilito quando le imprese efficienti erano soltanto quelle "occidentali".

In questo inizio degli anni Novanta è divenuto ormai chiaro a tutti che le imprese competono piú o meno bene nell'arena del mercato non soltanto in base alle capacità imprenditoriali del management e alle competenze delle maestranze, ma anche in funzione dell'apporto – che può essere neutro, positivo o negativo – dato dal contributo del sistema economico al quale l'impresa appartiene, ed è in questa direzione che occorrerà spingere l'analisi per escogitare nuove "regole del gioco" veramente universali, che non inducano i sistemi economici a farsi una lotta senza quartiere in nome della "sopravvivenza del piú adatto".

Tali politiche devono servire ad un tempo sia a controllare i sistemi economici piú dinamici, sia a favorire quelli che piú ne hanno bisogno per sottrarre a condizioni di vita sub-umane le loro popolazioni.

Il liberoscambismo di facciata che domina la vita economica internazionale, anche quando è stato pienamente applicato, non ha permesso alla "mano invisibile" di far sentire i suoi benefici effetti sui sistemi economici piú arretrati o piú popolati. Paesi come il Giappone, e le economie di nuova industrializzazione dell'Estasia, sono riusciti a crescere non già praticando il liberoscambio, bensí il protezionismo ma nello stesso tempo contando sul liberismo altrui. Non si dimentichi che un terzo dei prodotti esportati dal Giappone (e dall'Estasia nel suo complesso), va negli Stati Uniti.

Oggi il Giappone è, insieme con la Germania e qualche altro paese minore, uno dei pochi sistemi economici che potrebbe applicare con sincerità e senza riserve l'ideologia liberoscambista, ma ciò non deve farci dimenticare che è stato proprio praticando politiche opposte che il Giappone ha potuto creare le basi per liberalizzare in questi anni Novanta.

L'era delle ideologie sembra al tramonto e occorrerà pensare a qualche nuovo schema di riferimento che tenga conto delle esperienze storiche di questi ultimi due secoli e che riconosca finalmente che comportamenti diversi da quelli tipici di chi appartiene all'alveo culturale europeo non possono essere considerati semplici "anomalie", ma sono invece la prova che le nostre "regole universali" funzionano soltanto in un ambito culturale ben preciso, quello di matrice europea che è stato dominante negli ultimi cinque secoli, ma che non è piú tale e lo sarà probabilmente sempre meno in futuro.

Forse bisognerà allora formulare una teoria che accetti come canone fondamentale un "protezionismo differenziato" commisurato sia allo stadio di sviluppo (e quindi al grado di benessere materiale di cui godono i suoi abitanti), e sia alla qualità dell'*orgware* che caratterizza ciascun sistema economico.

Il caso Giappone potrebbe essere in fondo un pretesto per liberarci di vecchi strumenti ormai inservibili, se non addirittura dannosi, e sperimentarne di nuovi che rendano il mercato – nell'interesse di lungo periodo di tutti – meno ostile ai piú deboli, poveri e disorganizzati. Si tratterebbe di ideare uno schema teso a trasferire in sede internazionale quello che abbiamo fatto escogitando il *welfare state*, al fine di generare una società meno ferina.

Se invece preferiremo continuare sulla vecchia strada forse saremo costretti a tradire i nostri principi (sacri ma messi in pratica con discontinuità) e gli ideali propugnati, lasciando ad altri (il Giappone già oggi e domani gli altri paesi dell'Estasia) il compito di portabandiera. Oppure – peggio – dovremo soccombere (e dovremo farlo lietamente, coscienti di applicare i principi da noi stessi propugnati) sotto i colpi di chi è piú efficiente e merita quindi, nell'ottica vigente e che per ora sembriamo condividere, di eliminarci dal mercato. Sarebbe forse meglio, dovendo fare i conti con il Giappone, cercare di reimparare da esso quanto ha appreso da noi reinterpretandolo con i suoi canoni culturali e quindi trasformandolo per le sue esigenze e adattandolo alle sue caratteristiche.

2. *La qualità come fattore vincente della competitività giapponese*

L'insieme dei paesi economicamente avanzati membri dell'OCSE produce i quattro quinti del Prodotto Nazionale Lordo mondiale e in quest'area la qualità (misurabile con un indice non facilmente quantificabile dato dal rapporto prestazioni/prezzo) è il caposaldo della competitività di quasi tutte le imprese, siano esse produttrici di beni o di servizi. Nei paesi dove i redditi della maggior parte dei consumatori sono invece pericolosamente vicini alla mera sussistenza l'elemento chiave della competitività resta il prezzo.

Cosí, nella maggior parte del mondo che conta economicamente, l'elasticità di domanda dei beni e servizi è ormai strettamente correlata al *reddito* dei potenziali acquirenti, piú che al *prezzo* dei beni e servizi prodotti. Ciò spiega ad esempio perché il trasferimento di capacità produttiva dai paesi industrializzati verso i paesi in via di sviluppo si sia arrestato dopo un avvio promettente. Due fattori vi hanno contribuito: l'introduzione della microelet-

tronica nei processi produttivi, che mediante l'innovazione di processo ha consentito ai paesi sviluppati di restare competitivi, e soprattutto l'esigenza di una qualità sempre piú elevata del prodotto che i paesi in via di sviluppo non erano sempre in grado di soddisfare o garantire.

L'incapacità di innalzare il livello qualitativo della produzione si è rivelato il tallone di Achille di buona parte dei paesi socialisti, mentre la straordinaria capacità mostrata in tale senso dalle imprese giapponesi rispetto a quelle europee e nordamericane è divenuto palesemente il fattore competitivo vincente. Alla base di una superiore qualità e di superiori standard produttivi (*zero difetti*) stanno le motivazioni e gli incentivi degli addetti alla produzione. Sia le une che gli altri non sono facilmente trasferibili mantenendo inalterata la loro efficacia senza gli opportuni adattamenti, ma occorre non dimenticare che le motivazioni di base sono identiche presso tutte le popolazioni.

Il desiderio di primeggiare non ha gradazioni diverse in Giappone e in Europa, ma il cosiddetto *individualismo* sceglie nei due contesti culturali modi diversi per mostrarsi. Cosí in Giappone non è lecito farsi strada a spese dei colleghi senza avere dimostrato con i fatti una superiore dedizione al lavoro e una maggiore capacità. Occorre una legittimazione alla promozione che può venire soltanto dal gruppo di appartenenza. Chi avrà dimostrato la propria superiorità potrà cosí assumere posizioni di maggiore responsabilità senza per ciò frustrare le aspettative di chi non è salito gerarchicamente. In questo contesto non sarebbe opportuno scegliere all'esterno qualcuno da porre in posizione dirigenziale (possono fare eccezione i presidenti, che in Giappone, sia pure circondati dall'universale rispetto e deferenza, si limitano ad assumere la responsabilità di decisioni prese da altri dirigenti). Se a far carriera fosse qualcuno che non conoscesse a fondo l'impresa o che non superasse per capacità e dedizione tutti gli altri, ciò creerebbe un clima di malcontento poco propizio al rafforzamento dello spirito di corpo e alla capacità di lavorare insieme con efficienza.

A questo proposito diviene sempre piú chiaro anche da noi in Occidente che i meccanismi di mercato guidati unicamente dall'interesse personale di breve periodo sono inadeguati sul piano sociale, poiché danno vita a rapporti fortemente conflittuali, ma lo sono anche sul piano della mera efficienza economica. La capacità competitiva è infatti maggiore in quei sistemi economici dell'Estasia, la cui punta di diamante è per ora il Giappone, dove le *relazioni contrattuali* sono integrate e spesso sostituite da *relazioni fiduciarie*.

Le *relazioni fiduciarie* impongono ai contraenti un'attenzione reciproca tale da coinvolgere la sfera morale personale. Ecco che allora la cura per la qualità e il servizio cessa di essere soltanto una politica e diventa un dovere.

In una società governata da precetti che non hanno un'origine religiosa e dove i valori immanenti sono i soli che contino, questo dovere ha un valore cogente molto forte ed è sicuramente un potente fattore alla base della dedizione al lavoro che contraddistingue i giapponesi.

Le ragioni che hanno permesso il radicarsi in Giappone di relazioni fiduciarie rispetto a quelle contrattuali sono molteplici e complesse e vanno cercate, ad esempio, nel sistema di reclutamento della forza lavoro delle grandi imprese. Questa è soltanto una delle ragioni, e fra le piú semplici da analizzare, ma certo non la piú importante.

Per ridurre l'eccessivo *turnover* della manodopera le grandi imprese giapponesi cominciarono, nel periodo tra le due guerre, a offrire incentivi a quei lavoratori che fossero rimasti piú a lungo in organico. Ai salari commisurati all'anzianità di lavoro, si aggiunsero l'assistenza sanitaria, la casa, gratifiche semestrali basate sull'andamento dell'azienda, la compartecipazione azionaria. Nel dopoguerra le grandi imprese cessarono del tutto di assumere lavoratori con esperienza reclutando personale soltanto tra i giovani che concludevano gli studi, e sulla base delle loro "caratteristiche generali" (grado di preparazione scolastica e qualità umane) e non delle "funzioni" che avrebbero svolto in azienda. Se ciò implicava un elemento di rigidità (la relazione fiduciaria impegnava l'impresa a non licenziare) a questa si poteva ovviare in due modi: con la mobilità interna della forza lavoro, e con i contratti di sub-appalto e manutenzione stipulati con imprese piccole e medie dove l'obbligo all'impiego a vista non poteva essere garantito.

In questo contesto l'adozione di tecniche *labour-saving* non veniva e non viene osteggiata poiché non mette in pericolo i posti di lavoro e serve a far crescere l'efficienza aziendale. I lavoratori sono pronti fin dal primo giorno a una vita di lavoro fatta di mansioni diverse alternate a periodi di tirocinio, ed è nel loro interesse che tutto funzioni per il meglio nell'impresa alla quale hanno indissolubilmente legato la loro vita e alla cui gestione partecipano effettivamente, sia pure in modo marginale, con suggerimenti e proposte di cui si vedranno riconosciuta in modo diretto o indiretto la paternità. Per gli addetti alle imprese piccole e medie satelliti delle grandi mantenere i contratti di fornitura è una questione di sopravvivenza di cui le maestranze sono fin troppo consapevoli.

Come si vede si tratta di uno schema entro il quale troverebbero collocazione anche i lavoratori occidentali, ma i risultati potrebbero essere diversi perché diverso è l'*orgware* che caratterizza i sistemi economici europei e quello americano. Al centro del sistema economico giapponese vi sono dunque le imprese, non i consumatori. Fra queste sono le imprese grandi a dominare il mercato. Il loro atteggiamento nei confronti degli obiettivi di

lungo termine non è sostanzialmente diverso da quello della mano pubblica ed è quindi difficile che questa alleanza basata sui fatti – anche se si è affievolita – venga meno in futuro, con grande vantaggio per l'intero sistema economico nel suo complesso in termini di stabilità.

È in questo genere di clima che si sviluppa il perfezionismo che caratterizza le imprese giapponesi e che ha portato le innovazioni incrementali e la qualità dei prodotti *made in Japan* a sgominare la concorrenza, e che continuerà a farlo se non escogiteremo regole veramente universali, tese a dare un ordine internazionale non basato, come le altre ideologie ottocentesche in buona parte al tramonto, sul darwinistico e oggi inaccettabile *survival of the fittest*.

3. *La flessibilità dell'azienda giapponese: da cosa nasce e che effetti produce*

Il fatto che le grandi imprese giapponesi (e sono le grandi che stabiliscono con il loro comportamento le regole alle quali tutte si uniformano) guardino alle risorse umane in modo radicalmente diverso dall'impresa anglo-americana tradizionale è un grande fattore di flessibilità. L'impresa anglo-americana, dove i lavoratori sono raggruppati in base al mestiere (*trade*), non acquisisce collaboratori, ma essenzialmente "mansioni" da far svolgere spesso in modo rigido. Ciò poteva funzionare quando i processi produttivi erano relativamente stabili e i prodotti fortemente standardizzati come nella prima e nella seconda rivoluzione industriale. Ma con il rapido e continuo mutamento dei processi produttivi si impone anche la riorganizzazione delle mansioni e ciò implica il licenziamento o almeno un processo di riconversione delle capacità produttive della forza lavoro spesso lungo e costoso.

L'impresa giapponese tende invece ad assumere forza lavoro avente determinati requisiti di carattere generale (grado di istruzione scolastica, indole e preparazione generale) e specifico (studi tecnici o di altro tipo) che ne consentono un uso variabile nel tempo in funzione delle esigenze aziendali, che sono oggi per definizione continuamente mutevoli.

La forza lavoro cosí reclutata, non essendo composta da uomini-funzione, assume un atteggiamento di cooperazione con le ragioni dell'azienda anche quando questa, mutando i metodi produttivi, chiude reparti o intere unità produttive, per aprirne di nuovi dove la stessa forza lavoro dovrà essere impiegata.

Poiché l'orizzonte temporale prevalente nel quale l'azienda opera non è quello di breve periodo, la sensibilità del lavoratore nei confronti delle esigenze dell'impresa, esso stesso elemento non trascurabile di flessibilità, si

trasforma in attenzione per la qualità dei prodotti e dei servizi forniti e in cura per i dettagli, elementi che in un mercato dominato da consumatori che godono di redditi elevati diventano i fattori di competitività vincenti.

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THE BASES OF JAPAN'S COMPETITIVITY

The reasons behind the vitality of the Japanese economic system have changed (at least in the opinion of the observers) in each of the decades that characterize the postwar period, in an effort of interpreting the economic success of Japan. Each interpretation has shown to be ill-rooted, due to the superficial and mistaken analysis made.

If Europe wants to have a strategy enabling it to cope with the Japanese economic challenge, it has to properly analyze the factors of Japan's economic success. The West has founded its economic ideology on free trade, based in turn on the factor endowment of each trading nation. What the 19th century theorists failed to see is now under everybody's eyes: the factor endowment can be artificially improved or even created through appropriate measures like industrial, agricultural and trade policies. The decisive factor becomes then what makes such a creation or improvement possible in one economic system and impossible in another one.

For this author such a factor is the quality of *orgware* (defined as the reciprocal interaction between the institutions, rules that define them and concrete behaviours having an impact on the economy of a particular country) which is a direct function of the good (or bad) economic performance of the system considered. For example, differences in the time horizons characterizing two economic systems may lead to qualities of *orgware* remarkably lower where the shared time horizon is shorter, and higher where it is longer.

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URBAN PLANNING UNDER THE MICRO-ELECTRONIC REVOLUTION IN JAPAN

by
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1. *Regional Impact of the M-E Revolution*

After the Second World War, the structure of capitalism in Japan was transformed into something fundamentally different from pre-war days – i.e. there was a conversion from a textile dominated economy to one dominated by heavy-chemical industries. The "economic take-off" began in the late 1950s, and in the following fifteen years Japan experienced two great surges in its economic growth which resulted in an unequal development of regions and a social structure with many economic disparities.

In the past, Japan could be divided into three typical regions: the industrialized central regions; the industrialized periphery regions and the agricultural regions [1].

In the mid-70s, the structure of capitalism began to change due to the impact of the Micro-Electronic (M-E) Revolution. Since then the high-technology industries have been developing in the agricultural regions, and the heavy-chemical industries have been declining in the other industrial regions. Only the Tokyo area is growing, and at a very rapid pace. Tokyo is called the "world city" or the world-wide "technopolitan area".

During this transformation, many urban and zoning plans were released in the 1980s. How do they depict the city's future? What are their functions? Whose interests do they represent? How are their relationships to social movements?

This paper analyses three typical cases: 1) Tokyo as a "world city"; 2) the transformation of Kawasaki from a heavy-chemical industrial city to a

* Chuo University, Tokyo.

[1] See FURUKI (1977, Chap. 2).

high-tech city, and 3) Ooita and Nagaoka as cases of technopolis. Through these case studies, an attempt is made to explore some aspects of space production in Japan.

2. *Production of Space: Tokyo*

Henry Lefebvre (1974, p. 376) once said: "Not only has capitalism seized pre-existing space, the land, but it tends to produce its own space". Moreover, not only does capitalism incorporate space into the production of surplus-value, but it also aims at making this production completely dependent on the centers of information and decision-making. Urban planners mask such an extraordinary manipulation. The planning of Tokyo is here examined from this point of view.

Just after the Meiji Restoration, the Japanese government strongly pushed the planning of Tokyo as a national political center, which was symbolized by the construction of Hibija, the government office zone. Since the end of the 19th century, the population of Tokyo had been rapidly increasing concomitantly with industrialization. Marunouchi, the big companies office zone, was constructed at the beginning of the 20th century. Land had begun to become scarce and real estate agents emerged. The new Urban Planning and Zoning Act was enacted in 1920. By the end of the 1920s, Tokyo had become the biggest industrial city in Japan.

Tokyo was heavily damaged during the Second World War. However, it maintained its position as a political and economic center. A few years after the end of WWII, its population was over pre-war levels, increasing in the suburbs, especially in the Tama zone (western zone), while stagnating in the central zone. In 1956 the Metropolitan Area Redevelopment Act was enacted. Coupled with high economic growth, Tokyo has been strengthening its central controlling function with the development of its transportation and communication systems, while relatively declining as to its productive function. On the other hand, overpopulation and insufficient investment in the social environment has produced many urban problems as well as air pollution.

Thus in 1967 a "progressive" government was set up in Tokyo. This government tried, first of all, to solve these problems through dialogues with the citizens. These policies were embodied in the "Tokyo Plan Toward Creating Space and Dealing with Air Pollution" (1971), in which the idea of a "civil minimum" was adopted to indicate the tentative standard of modern urban life, while the plan of space based upon use value was considered

insufficient. The space plan was limited to promoting the decentralization of population and industrial companies, while maintaining its central controlling function.

In 1979 the political climate of Tokyo government shifted from the left to the right. By that time, the Japanese society entered a new phase. Tokyo needed to be restructured according to a new stage of the international economy as well as to the impact of the M-E Revolution. Under these conditions, the Tokyo government made the First Long-Range Plan which was called "My Town Tokyo Plan" (1982). However, it was not suitable for the new phase mentioned above because the main policy of the Tokyo government was not metropolitan planning but community planning.

The following year, the city government had to set about making a new plan. In 1985 the National Land Agency released the Metropolitan Reconstruction Plan and the Tokyo government made the Second Long-Range Plan, making some important changes to the previous plan.

The first change is the redevelopment of the Tokyo bay area. Since the 1950s this area has been a national center of transportation, a zone for the heavy-chemical industries as well as the biggest center of energy services. Now it is changing into an international business zone under the "intelligent city plan".

The second change is the redevelopment of the metropolitan zone, especially the Marunouchi zone. Though this area has been the big companies' office zone since the pre-war period, it is changing now-a-days into an international financial center and is increasingly concentrating all central controlling functions.

The third change is the development of the Tama area as a high-tech zone, connected with the "technopolitan areas" nearby. Thus Tokyo is rapidly becoming a "world city" contemporarily with the formation of a high-tech zone. As a result, land prices have suddenly risen, especially in the metropolitan zone. Neither the Tokyo government nor the national government could control this matter which mainly depended on the logic of the international or world economy. Here we can find the new spatial logic that Castells (1985) calls the "space of flows".

3. *Transformation of Urban Planning: Kawasaki*

Kawasaki is a big industrial city which holds an important role in the "technopolitan area". Population is over one million, industrial workers are

over 150 thousands and the city manufactures have a yearly product of over six billion yen [2].

Until the end of the Second World War, the industrialization of this city was connected with wars. It started in the period of the Sino-Japanese (1894-1895) and Russo-Japanese (1904-1905) Wars and was enhanced by the First World War (1914-1918). At that time Kawasaki was already an important heavy-chemical industrial city. The number of industrial workers was over half the working population. During the Second World War, this city further developed as a central area of the heavy-chemical industry which means that it was a center of the war industry.

Just after the end of the war, industrialization in Kawasaki regressed to some degree, but soon after it advanced again on the legacy of the pre-war industrial structure. This matter was pushed forward by the Japanese government and American policy. In the bay area, land was reclaimed from the sea, and many large heavy-chemical companies were located there. The First Plan of Kawasaki City (1963) depicted its future as "an industrial and cultural city". The term "cultural" meant an increase of investment for the social environment (houses, schools, etc.). However, since this investment was not adequate, soon after environmental pollution and urban problems arose and with them the anti-pollution movements grew.

Hence, the Second Plan of Kawasaki City (1968) changed its image to "a city which its citizens could be proud of". The intention was to wipe out the bad image of a polluted city. Undoubtedly the city government endeavoured to control air pollution and help the victims of pollution. Nevertheless, it continued to carry on its industrial plans as before, perpetuating the pollution problems of the city.

In 1971 a "progressive" city government was established in Kawasaki. This was the result of the growing anti-pollution movements and of the explosion of the citizens' longing for a non-dirty city. Trade unions, the socialist party and the communist party linked hands and played a leading role in the election campaign for a "progressive" candidate. The government was obliged to tackle the pollution problem and from 1971 to 1973 carried out various environmental policies. Moreover it tried to encourage greater citizens' participation in government decision-making. On these bases, the New Comprehensive Plan was made in 1974. The city depicted in this plan was to be a "human city". It meant that the citizens' lives had priority over all other factors. This plan put emphasis on the importance of civil welfare,

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[2] For a more detailed analysis of urban planning in Kawasaki, see FURUKI (1987, especially pp. 799-820).

a comfortable environment and community democracy. Citizens' participation was also introduced in making this plan and all this was a new way of facing the city problems.

After 1973 the Japanese economy as well as other advanced capitalist economies entered a new phase. In 1975 for the first time after the war Japan registered a minus growth. But after 1976 thanks to the M-E Revolution Japan experienced economic growth and prosperity again. Kawasaki changed into a high-tech city, while still retaining its heavy-chemical industries. The 2001 Kawasaki Plan (1983) transformed some aspects of the previous plan maintaining the emphasis on the "human city". Now-a-days the plan is launched but the emphasis upon the creation of a "human city" has lessened while minor features of the plan have prevailed. Promotion of high technology and international trade in Kawasaki seem to have the priority over other aspects of the plan. This part of the plan was depicted as the "international scientific-cultural city". After three years a center for R&D began to develop in conjunction with the development of the "international scientific-cultural city". This new type of city was called "a campus city".

The case of Kawasaki shows the transformation of a logic of space production. However, the "progressive" city government could not control the differences between its urban plan and its implementation. Under such conditions it was unavoidable that the relationship between the city government and urban social movements began to crack.

4. *Regional Extension of the M-E Revolution: Technopolis*

During the years 1984 and 1985, the Japanese government designated eighteen areas as "technopolis". It was a restructured area at the conjunction of three sections: an industrial section in which high-tech industries were given the priority over other industries, an academic section and a residential section. This was a nation-wide regional policy, but, owing to the limited amount of state investment, the leadership of the local government and the resource mobilization of the private sector were regarded as important factors.

Here we focus on the regional-urban planning of two areas, Ooita and Nagaoka. They are the typical cases where urban planning had started before the above designation.

Ooita is a prefecture situated over 1000 km southwest of Tokyo [3]. In

[3] For a more extended analysis of Ooita, see Syoji (1985).

this prefecture the biggest city is Ooita City which in 1962 was designated as new industrial city by the national government and by the beginning of the 1970s succeeded in building its coastal heavy-chemical industrial zone. The Comprehensive Development Plan of Ooita City (1972) depicted the city as a "rapidly developing" one. But pollution soon followed industrialization while a slowing down of the economy caused serious damage to its heavy-chemical industries. In 1975 a "progressive" city government took over. In 1978 it made the Comprehensive Plan of Ooita City which forsaw its future as that of a "human city". That very year a new prefectural government was set up. Its governor was an ex-bureaucrat and a man of ideas. Soon after taking office, he made it his policy that each village should create its special product and a few years later he began to make a new plan aimed at combining the activities of IC (integrated circuit) companies located near Ooita City, the functions of new industrial city and the above mentioned policy. In 1983 all this resulted in the Comprehensive Promotion Plan of Ooita Prefecture which was practically its Technopolis Development Program. In 1984 the city government reformed the previous plan maintaining the essence of the "human city". In this reformed plan Ooita city combined the character of new industrial city and that of mother city of a technopolitan area. The Chamber of Commerce and Industry and most businessmen were in favour of the prefecture plan, but were not interested in the city plan. The response of trade unions was divided: the left wing appreciated the city plan whereas the right wing did not. There were small groups opposing both plans but most citizens were indifferent to them.

Nagaoka is a middle-size city situated over 200 km north of Tokyo [4]. It is now connected with Tokyo by the Super Express Line and superhighway. However, owing to its heavy snowfalls, in this city industrialization and urbanization stagnated until the 1960s. At the beginning of the 1970s the plans for the two traffic networks mentioned above were decided by the national government, and a few years later the city government made the Nagaoka New Town Plan (1974). It aimed at restructuring the westside area of Shinano River by the conjunction of a residential section, a college section and a distribution industry section. Such a plan obviously aimed at making a technopolis of the area. Accordingly, when the Ministry of International Trade and Industry (MITI) released the idea of a technopolis, the city government immediately snatched at it, and MITI responded to this. Thus the Nagaoka New Town Plan sideslipped into the Nagaoka Technopolis

[4] For a more extended analysis of Nagaoka, see Syoji (1985).

Development Plan (1984), which forsaw its future as a "Shinanogawa techno-valley". But the leading technological companies are scarcely located there now-a-days. Most businessmen did appreciate this plan, but some of the traditional companies were critical of it fearing that the plan would not help the development of the traditional industries. Trade unions (left wing) have praised and supported the previous mayor for his far-reaching intelligence. There was hardly any opposition except from the communist party. Most citizens were indifferent to the plan.

These cases show the emergence of one of the big problems originated from the M-E Revolution: the production of new space. Ooita was fairly successful in solving it while Nagaoka has failed. Nevertheless both towns have experienced: 1) that city plans do depend on national plans, and 2) that opposition to them is fragmented or limited to small groups which practically have no viable alternatives to propose.

5. *Urban Planning and Social Movements*

As discussed above, in the 1980s many urban plans were made to meet the new needs originated by the M-E Revolution. These plans, without exception, depicted the city future with rose colours: "an intelligent city", "a campus city", "a techno-valley", etc. However, they do not necessarily promise to solve such problems as that of the sudden rise of land prices in Tokyo zones, urban and pollution problems in many cities, and so on. Rather, they mask such problems. This is, maybe, their only function. They basically represent the interest of big companies, multinational companies and the national government. Nevertheless, we cannot deny the importance of the M-E Revolution. It is a great factor of development in our post-industrial society. Urban planning under the M-E Revolution must contribute to the citizens' quality of life and social movements must ask for and encourage such planning.

There are social movements which aim at opposing the construction of roads as well as certain redevelopment works, and denounce the insufficiency of social investment in Tokyo and Kawasaki City. The anti-pollution movement in Kawasaki City is very strong. But now-a-days these actions and movements are not as strong as ten years ago, and are divided into many clusters, not integrated in one or a few groups. This is their weakness in that they are not strong enough to oppose urban planning totally or to propose alternatives to it. Why have they changed like this? Is this a characteristic of the post-industrial society or of the Japanese society?

Surely the Japanese have enjoyed the "prosperity" produced by the M-E Revolution and have been ruled by a strong national government. Given these conditions, social movements decline and a new conservatism prevails. But, under different conditions, a common phenomenon is found in many advanced societies. This seems therefore a common feature of post-industrial societies. The problem is that a different strategy or a new alternative is still to be found.

Once Castells (1977) insisted on the importance of urban social movements which can oppose urban planning as a political intervention to reorganize the urban system. About ten years later, he changed his theory from marxian structuralism to a position close to A. Touraine, and explored the structure and meaning of the contemporary urban social movement as a reactive Utopia (Castells, 1983, p. 328). Now-a-days he is searching for the relationship between social movements and the "space of flows" (Castells, 1985). However, in his theory the opposition to urban planning is gradually neglected.

Recently, criticizing Castells' approach, Gottdiener (1985) has insisted on the concept of the environmental movement which specifies the nature of interventions in space transformation. He throws a new light on the actions of "advocacy planners", on the resistance to renewal and redevelopment, and so on. But the active spheres of this movement are limited and his insistence is insufficient as a new strategy. Finding a new strategy for our post-industrial or post-fordism society is a challenge for the future.

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PIANIFICAZIONE URBANISTICA E RIVOLUZIONE MICROELETTRONICA IN GIAPPONE

Dalla metà degli anni 1970 in poi il capitalismo giapponese è stato influenzato dalla rivoluzione microelettronica e negli anni 1980 molti pianificatori urbanistici hanno dovuto affrontare i problemi che ne sono seguiti. Questo articolo cerca di analizzare tre casi tipici: Tokyo come città internazionale, Kawasaki come città con industrie ad alta tecnologia, Ooita e Nagaoka come tecnopoli.

I pianificatori urbanistici di queste aree hanno dipinto di rosa il futuro delle città. Tuttavia essi hanno mascherato molti problemi urbanistici che esistevano ed esistono tuttora.

Sono invece necessari nuovi piani alternativi per migliorare la qualità della vita dei cittadini.

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POLITICA ECONOMICA E SVILUPPO DELL'INDUSTRIA AUTOMOBILISTICA GIAPPONESE E COREANA

di
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Scopo del presente saggio è quello di avanzare alcune considerazioni sullo sviluppo industriale del settore automobilistico, con particolare riferimento al ruolo che il governo ha rivestito in questo contesto in due paesi asiatici: il Giappone e la Corea del Sud. Si tratta di due casi che pur presentando forti analogie e alcune marcate differenze nelle rispettive dinamiche di sviluppo, si configurano come esempi di "successo": il Giappone è oggi il principale produttore mondiale di autoveicoli mentre la Corea del

TABELLA 1
PRODUZIONE TOTALE DI AUTOVEICOLI NEI PRINCIPALI PAESI

anni	1960	1965	1970	1975	1980	1985	1988/89
Giappone	481551	1875614	5289157	6941591	11042884	12271095	13025741 *
Stati Uniti	7905119	11137830	8283949	8986513	8009841	11652743	11190432
Germania Occid.	2055149	2976477	3842247	3186208	3878553	4445920	4625314
Inghilterra	1810700	2177261	2098498	1648399	1312914	1313946	1544848
Francia	1369210	1641696	2750086	3299620	3378433	3016106	3698465
Italia	644633	1175548	1854252	1458629	1610287	1572907	2111019
Corea			28819	37279	123135	378162	1129470 *
Brasile	133041	185187	416089	930235	1165174	966708	1068754

Fonte: JAMA (1989c, 1990); KAICA (1990).
* 1989.

* Università degli Studi di Milano, Istituto di Economia, Milano.
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Sud ha assunto nell'arco di pochi anni il ruolo di maggior esportatore fra le Economie di Nuova Industrializzazione (NIEs) impegnate nella produzione di auto.

In entrambi i paesi, la programmazione economica elaborata dal governo e realizzata attraverso misure intese a stimolare, favorire e proteggere il settore, ha costituito la base essenziale della crescita. Nel caso del Giappone, come in quello della Corea, la fondazione di un'industria automobilistica nazionale non è stato il risultato di forze spontanee. Misure di diversa natura hanno permesso all'industria automobilistica di crescere sul mercato interno e rafforzarsi senza che un'indesiderata concorrenza di produttori esteri ne compromettesse lo sviluppo. Un successivo sbocco sui mercati esteri (la liberalizzazione del mercato interno è stata molto piú lenta e graduale) ha contribuito al rafforzamento della competitività e quindi dell'efficienza e della qualità del prodotto.

Elemento centrale di questa discussione è quindi la strategia adottata dal governo nel processo di sviluppo e la politica industriale perseguita che ha portato alla crescita del sistema-auto. L'analisi verrà affrontata facendo particolare riferimento alle politiche adottate nei confronti dell'acquisizione di tecnologia.

Le analogie e i legami fra le industrie automobilistiche nei due paesi, messi in luce dall'indagine, costituiscono un'occasione per analizzare il ruolo che il Giappone svolge in qualità di modello e partner nei confronti della Corea. La Corea ha in buona parte seguito l'esempio fornito pochi decenni prima dal Giappone, anche se le differenze esistenti fra le due economie hanno fatto sí che per rispondere alle esigenze locali la strategia di crescita coreana risulti essere molto diversa da quella giapponese nel suo complesso. In particolar modo, per ciò che attiene il settore dell'auto, la Corea si è ispirata molto alla strategia giapponese, in particolare per la legislazione volta ad organizzare la produzione, per il sistema produttivo adottato, ecc.

In Giappone e in Corea la politica economica a sostegno dell'industria, insieme alle forme di protezionismo a tutela della *infant industry* hanno senz'altro sortito esiti positivi. Tali misure, accettabili unicamente in una fase iniziale, hanno contribuito a creare basi piú o meno salde di sviluppo. Solo a questo prezzo i costi sostenuti, non solo a livello di sussidi ma anche nei confronti del consumatore, sono giustificabili. Nel considerare la *performance* delle industrie automobilistiche nei due paesi, diviene possibile, seppur in modo parziale, identificare alcuni dei limiti dell'azione politica stessa. Limiti di applicabilità di analoghe misure in contesti economici diversi, con un grado di sviluppo economico diverso. Scaturiscono da qui alcune contrad-

dizioni ancora da superare, oggetto della discussione dei prossimi paragrafi.

Politica economica e sviluppo in Corea: i Piani Quinquennali

È a partire dal 1963, con l'inaugurazione del primo piano economico quinquennale, che lo sviluppo economico della Corea è stato regolato perseguendo precisi obiettivi identificati di volta in volta dal governo. Una analisi dei piani quinquennali e l'andamento reale dell'economia permettono di seguire la strategia di sviluppo adottata e i risultati conseguiti.

La Tab. 2 presenta uno schema sintetico dei sei piani varati fino ad oggi, con i settori economici designati come settori-chiave al fine dello sviluppo e al cui potenziamento erano finalizzate le principali politiche economiche, le ragioni sottostanti a tali scelte e la *performance* in termini di crescita economica reale.

La crescita dell'economia coreana è stata caratterizzata da una prima fase basata su un'industrializzazione pesante *import-substituting* accompagnata da una di tipo *labour-intensive* mediante il potenziamento di alcuni settori piú tradizionali (tessile) (I-III Piano) cui si è aggiunto il settore dell'elettronica di consumo, ed una seconda fase in cui si realizza il passaggio verso un'industria pesante a piú elevato contenuto tecnologico (IV-VI Piano).

Nella prima fase, l'incoraggiamento della produzione in settori *labour-intensive* permetteva di impiegare l'unica risorsa veramente abbondante in Corea: il lavoro. Non rendendosi necessario un elevato contenuto di capitali e tecnologia fu facilitata la ripresa dell'attività economica. Essendo il paese ancora in condizioni di povertà, ed il mercato interno non in grado di sostenere la crescita di tali industrie, la maggior parte della produzione venne indirizzata all'estero. L'esportazione costituiva un modo per procurarsi valuta estera che consentisse l'acquisto delle materie prime e della tecnologia necessaria a sostenere le fasi successive dell'industrializzazione. Allo scopo di migliorare la qualità del prodotto introducendo sistemi di produzione semplici ma piú efficienti, ed allo scopo di finanziare ulteriori investimenti, vennero varate diverse misure volte ad incoraggiare gli investimenti esteri e l'afflusso di capitali. La liberalizzazione riguardava solo i settori identificati dal governo, e i progetti erano soggetti alla condizione che la produzione fosse volta esclusivamente ai mercati esteri. L'introduzione di capitali sotto forma di investimenti era anche resa necessaria dall'esigenza di sostituire gradualmente i flussi finanziari a titolo di aiuto, dei quali la Corea aveva ampiamente goduto nella prima fase dello sviluppo, ma che erano destinati a

TABELLA 2

PIANI QUINQUENNALI DI SVILUPPO DELLA COREA

	I Piano 1962-1966	II Piano 1967-1971	III Piano 1972-1976	IV Piano 1977-1981	V Piano 1982-1986	VI Piano 1987-1991
Industrie chiave	Tessile Giocattoli Legno compensato	Tessile Radio Miscellanee	Tessile Radio Televisori	Acciaio Cantieristica Televisori Semiconduttori	Acciaio Auto Semiconduttori	Acciaio Auto Semiconduttori Computer
Industrie da sviluppare	Cemento Elettrico Raffinazione	Chimica pesante Macchinari Elettronica Cantieristica	Macchinari Acciaio Metalli non ferrosi Elettronica Cantieristica Raffinazione	Macchinari utensili Acciaio Macchinari elettronici	Computer Attrezzatture per la telecomunicazione	
Principali politiche	Apertura agli investimenti esteri 1961 Promozione esportazioni 1964	Costruzione infrastrutture stradali. Supporto alla produzione di lamiere di ferro	Costruzione cantieri Sovvenzioni alle piccole e medie industrie	Politica di stabilizzazione	Sovvenzioni alle piccole e medie industrie, ai produttori di parti e componenti; liberalizzazione del mercato finanziario	
Crescita economica	7,8%	9,6%	9,7%	5,8%	7,9%	
Crescita esportazioni	36,6%	33,8%	32,7%	11,1%	12,9%	
Crescita importazioni	18,7%	25,8%	12,6%	10,5%	6,9%	

Fonte: BANK OF KOREA; CHUSHO KIGYO KENKYUSHO (1988, p. 19); EPB (1990).

ridursi. Inoltre, il peso degli interessi sui prestiti era un problema che l'economia si sarebbe trovata ad affrontare entro breve tempo.

Come ai piani quinquennali si accompagnassero misure di politica economica coerenti a perseguire gli obiettivi stabiliti, risulta evidente da un confronto fra la Fig. 1 e le Tabb. 3 e 4 illustranti rispettivamente la legislazione volta a regolare gli afflussi di investimenti esteri e l'introduzione di tecnologia.

Per dirigere e coordinare queste politiche, e adottare anche misure drastiche era necessario un governo forte, e sebbene la situazione politica della Corea sia stata, ed è tuttora piuttosto instabile, la politica nei confronti dello sviluppo economico, si è rivelata coerente [1].

Protezione del mercato interno, rigida regolamentazione delle importazioni, incentivi alle esportazioni sono state le principali misure adottate. Una graduale liberalizzazione è stata tuttavia iniziata a partire dagli anni 1970 limitatamente ad alcuni settori. La crescita non è stata naturalmente costante e regolare, ma caratterizzata da momenti di espansione alternati ad acute crisi.

È a partire dal 1977 (IV Piano Quinquennale) che l'industria pesante assume ruolo di primo piano nella programmazione. Acciaio, cantieristica e semiconduttori affiancano l'elettronica di consumo, e principale obiettivo diviene il passaggio verso un tipo di produzione a piú alto contenuto tecnologico, da esportare nei paesi avanzati. È in questo contesto che dopo il tentativo di sviluppare il settore cantieristico, il cui successo è stato compromesso dalle due crisi petrolifere, si inserisce la strategia per lo sviluppo dell'industria automobilistica.

Obiettivo designato del V e VI Piano Quinquennale, l'industria automobilistica è divenuta il settore che dovrebbe testimoniare il grado di sviluppo raggiunto dal paese. Per la complessità e l'alto grado di organizzazione economica che la produzione automobilistica richiese (qualità dei prodotti intermedi e coordinamento fra industrie di moltissimi settori-base quali plastica e vetro oltre che acciaio ed elettronica) l'auto è in genere un prodotto

[1] Rinunciando ad affrontare il complesso dibattito inerente la forma di governo ottimale ai fini dello sviluppo economico è tuttavia da rilevare che spesso l'introduzione di misure atte alla creazione di infrastrutture risulta controversa, imponendo degli elevati costi a breve per costituire una base di sviluppo a lungo termine. A questo proposito, per esempio, è da rilevare l'enfasi che il governo coreano ha sempre posto sull'istruzione, sia favorendo la formazione di tecnici e specialisti all'estero sia enfatizzando l'importanza di elevare il grado di alfabetizzazione in tutti gli strati della popolazione, e questo insieme con misure molto drastiche nei confronti delle industrie per indurle a rispettare i target di sviluppo imposti dai piani economici.

TABELLA 3

POLITICHE VERSO GLI INVESTIMENTI ESTERI IN COREA

1960 *Foreign Capital Inducement Act* (*FCIA*)
Prima base legale per l'introduzione di capitali esteri. Vari tipi di agevolazioni (reimpatriazione dei profitti per un massimo del 20% annuo, riduzione delle tasse, agevolazioni per la promozione di trasferimenti di tecnologia). Richiesto un minimo del 25% di partecipazione locale.

1966 *Foreign Capital Inducement Law*
Revisione in forma estensiva della precedente regolamentazione. Le imprese straniere vennero totalmente esentate da qualsiasi forma di imposizione per i primi cinque anni di attività, mentre una riduzione del 50% venne concessa per i successivi tre anni.

1967 *Comprehensive Measure of Rationalization of Foreign Capital Inflow*
Con essa venne realizzato il passaggio a una politica maggiormente favorevole agli investimenti e volta a ridurre i prestiti. Nonostante questa legge fosse sostanzialmente diretta a regolamentare il flusso di capitali in forma di prestito, rappresentò il primo tentativo di regolare il flusso qualitativo degli investimenti.

1969 *Measure to Promote the Inflow of Direct Foreign Investment and to Foster the Activities of Foreign Subsidies*
Miglioramento del sistema di supporto agli investimenti esteri.

1970 *Creazione della prima Free Export Zone* (Masan)

1973 *General Guidelines* (*Economic Planning Board*)
Stabilivano i criteri per l'accettabilità dei progetti di investimento, limiti alla partecipazione estera (50%), scala minima degli investimenti (50.000 US$ e 500.000 US$ a partire dal 1975). Nelle Free Export Zones le aziende straniere non erano tuttavia soggette a molte di queste limitazioni.

1983 *Foreign Capital Inducement Promotion Act* (effettivo dal 1984)
Introduzione di un sistema automatico di accettazione dei progetti di investimento. Passaggio da una "negative list" a una "positive list" ovvero, tutti i progetti venivano approvati ad eccezione di quelli riguardanti specifici settori non ancora liberalizzati. I progetti relativi ad investimenti con una partecipazione estera inferiore al 50% venivano approvati automaticamente mentre gli altri erano soggetti a verifica. La negative list comprendeva 297 industrie su un totale di 997 (Korean Standard Industrial Classification), fra cui la lavorazione del ginseng, media, beni di lusso, progetti implicanti un uso estensivo della terra ecc.

1989 *Liberalization of the Investment in the Automobile and Airplane Industry*

1990 *Revision of the Automatic Approval System*
Aumento del capitale di investimento soggetto ad approvazione automatica. Eliminazione di alcune agevolazioni concesse agli investitori esteri dalla FCIA del 1960. Il tasso di liberalizzazione raggiunse il 79,1% (97,7% nel settore manifatturiero). Nella negative list figurano ancora i servizi, le assicurazioni, la pubblicità e la finanza.

Fonte: HONG S.T. (1990); HONG S.W. and YIM C.H. (1990); SANO (1980).

TABELLA 4
POLITICHE RELATIVE ALL'IMPORTAZIONE DI TECNOLOGIA IN COREA

Anno	Contenuto della liberalizzazione	Settori industriali interessati
1978/4	Sistema di approvazione Minimo investimento 30.000 US$ 3% fixed rate (3 anni) Invest. Fisso Totale entro 100.000 US$	Macchinari, Chimica, Tessile, Elettrico, Metalli non ferrosi, Elettronica
1979/4	Minimo investimento 500.000 US$ 10% fixed rate (10 anni)	Energia atomica e tutte le industrie ad eccezione della difesa
1980/7	10% fixed rate (10 anni)	Tutti i settori
1982/9	Valutazione per ogni singolo progetto	Tutti i settori
1984/7	Passaggio dal sistema di approvazione a quello di notifica	Tutti i settori
1986/7	Introduzione dei diritti di marchio	Tutti i settori
1988/7	Notifica dei progetti alla Foreign Exchange Service Bank Minimo investimento 50.000 US$ 2% fixed rate (3 anni) Invest. Fisso Totale entro 100.000 US$	Tutti i settori

Fonte: AHN (1990); CHUNG (1986); KIM (1984).

delle economie mature. Di rilievo quindi il caso della Corea che, grazie ad una efficace politica economica e molti sforzi, è riuscita in cosí breve tempo ad esportare auto sui mercati internazionali. Tuttavia, problemi connessi al costo del lavoro, instabilità interna e vulnerabilità alle fluttuazioni internazionali minano ancora la sua crescita.

Lo sviluppo dell'industria automobilistica in Corea e Giappone

Le industrie impegnate nella produzione di autoveicoli in Corea sono attualmente quattro: Hyundai Motors, Daewoo Motors, Ssangyong e Kia Motors. Hyundai Motors, l'ultima ad essere stata fondata, cronologicamente, è la piú grande e potente casa costruttrice. Tutte e quattro le aziende sono annoverate fra le dieci maggiori imprese del Paese [2]. Kia, che vanta la piú lunga tradizione, è la sola ad essere esclusivamente specializzata in auto e

[2] TOYO KEIZAI NIPPOSHA (1990).

componenti, mentre le altre fanno tutte parte dei cosiddetti *chaebol* [3] la cui attività economica è in genere molto diversificata.

Nel 1989 la Hyundai Motors contribuiva alla produzione automobilistica nazionale con il 54,4%, coprendo per il 71% il mercato interno delle automobili insieme a Kia (28%), Daewoo Motors (14,3%) e Ssangyong (3,3%) [4].

La situazione produttiva del Giappone è piú nota: undici sono le case produttrici, anche se il numero si riduce a nove se consideriamo Nissan Diesel come parte di Nissan e Daihatsu come Toyota. Toyota e Nissan rimangono dai tempi della loro fondazione (rispettivamente nel 1937 e nel 1934) le grandi protagoniste, producendo rispettivamente il 30,5% ed il 18,2% della produzione nazionale [5]. Simili le dimensioni produttive di Honda (11%), Mitsubishi (10%) e Isuzu (10%), anche se il loro peso cambia se l'analisi viene calata in ambito internazionale [6].

Una caratteristica che accomuna le industrie dei due paesi è quella di avere un elevato numero di case produttrici, soprattutto se si considerano i paesi occidentali, dove il carattere oligopolistico della produzione è piú accentuato, sfiorando in alcuni casi addirittura il monopolio. Mentre in Europa la vicinanza e la relativa integrazione dei mercati ha fatto sí che la concorrenza si svolgesse in ambito europeo fra i pochi produttori nazionali, in Giappone e in Corea una prolungata protezione del mercato interno e una specifica regolamentazione del settore hanno favorito la creazione di una concorrenza "pilotata" (verso una maggiore efficienza produttiva) che si è svolta unicamente fra aziende nazionali.

Politica economica ed industria automobilistica

L'industria automobilistica coreana ha origini abbastanza recenti. La sua storia può essere fatta iniziare con la fondazione della Senara Co. nel 1962 la prima industria per l'assemblaggio di Semi Knocked Down (SKD) importati da Stati Uniti e Giappone. Da allora, la sua crescita è stata notevole: alla fine del decennio tutte le imprese per la produzione di veicoli

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[3] Gruppi finanziari la cui struttura viene spesso assimilata agli *zaibatsu* giapponesi dell'anteguerra. Vedi: STEERS, SHIN, UNGSON (1989).

[4] KAMA (1990b).

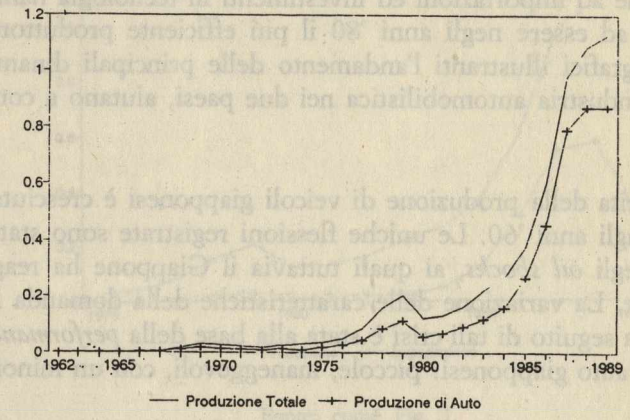
[5] JAMA (1990).

[6] Honda infatti è sempre stata piú attiva sui mercati esteri di quanto lo sia sul territorio nazionale.

tutt'ora esistenti erano state fondate [7], e realizzato il passaggio dall'assemblaggio di SKD a Completely Knocked Down (CKD).

Se confrontata con la storia del Giappone, la differenza è stridente, almeno se si considera l'arco temporale relativo al decollo della produzione. In Giappone, le basi per la produzione di veicoli risalgono all'inizio del secolo. Fino alla fine del secondo conflitto mondiale l'industria fu sostenuta dall'esercito e la produzione esclusivamente incentrata su veicoli pesanti, camion e vetture indirizzate a scopi bellici. Questa prima fase riveste un'importanza notevole per il Giappone, in quanto gli consentí di organizzare il sistema di produzione sia mediante un graduale miglioramento della qualità dei prodotti intermedi, sia a livello di coordinamento delle diverse produzioni concorrenti alla fabbricazione del prodotto-auto. Paradossalmente, fino agli inizi degli anni '70, il principale problema dell'industria automobilistica giapponese era la qualità del prodotto, ben inferiore a quello occidentale. I primi tentativi di esportazione fallirono infatti miseramente [8]. Incessanti

FIG. 1. Produzione di Autoveicoli in Corea, 1962-1989
(Milioni di Veicoli)

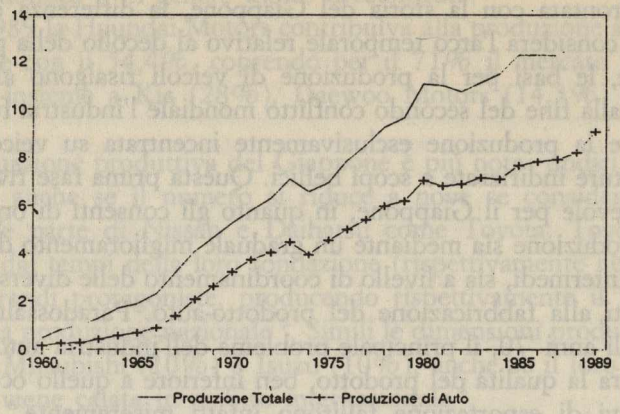


Fonte: (elab. su) KAICA (1990)

[7] Kia Motors, Asia Motors (successivamente divenuta parte di Kia), Hyundai Motors furono fondate rispettivamente nel 1962, 1965 e 1967. La Ssangyong Motor (ex Ha Dong-Whan e T'ong-A), fondata nel 1955, produceva in origine esclusivamente per l'esercito. Dal 1986 ha assunto la forma attuale (Vedi KATO e KUBOTA, 1990).

[8] Questo fu l'esito del tentativo fatto dalla Toyota nel 1957 di penetrare il mercato americano. Nei sei anni che succedettero, la Toyota si impegnò a fondo in programmi di ricerca per lo sviluppo di un nuovo modello di auto che potesse soddisfare la domanda americana.

FIG. 2. Produzione Totale di Autoveicoli in Giappone, 1960-1989
(Milioni di Veicoli)



Fonte: (elab. su) JAMA (1989a, 1990)

sforzi, insieme ad importazioni ed investimenti in tecnologia hanno portato il Giappone ad essere negli anni '80 il piú efficiente produttore di auto.

Alcuni grafici illustranti l'andamento delle principali dinamiche della crescita dell'industria automobilistica nei due paesi, aiutano a completare il quadro.

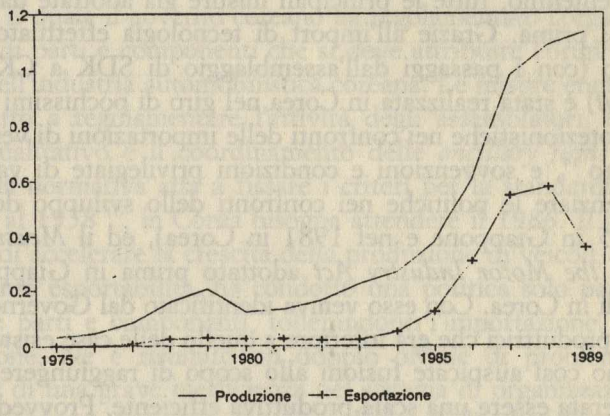
La crescita della produzione di veicoli giapponesi è cresciuta in modo stabile sin dagli anni '60. Le uniche flessioni registrate sono state in corrispondenza degli *oil shocks*, ai quali tuttavia il Giappone ha reagito molto positivamente. La variazione delle caratteristiche della domanda internazionale di auto a seguito di tali crisi è stata alla base della *performance* internazionale delle auto giapponesi: piccole, maneggevoli, con un minor consumo energetico.

Per quanto riguarda invece la Corea, il ritmo di incremento è stato piú lento e ha registrato alcune flessioni, di cui la piú grave nel 1980 a seguito della difficile situazione politica interna [9]. A seguito delle misure di sostegno varate dal governo volte a stimolare la produzione del "national car" si verificò poi una brusca accelerazione. Agevolazioni agli investimenti avevano infatti indotto Hyundai e Kia a creare nuovi impianti, potenziando la produzione. Se congiuntamente alla produzione si considera l'andamento

[9] A seguito dell'assassinio del presidente Park Chung Hee.

delle esportazioni si nota come a partire dal 1985, ovvero con l'inizio delle esportazioni sul mercato nordamericano, l'aumento della produzione sia essenzialmente trainato da esse. La strategia economica di sviluppo coreano incentrato sulle esportazioni risulta quindi evidente anche nella *performance* delle esportazioni del settore automobilistico. Nel 1987 le esportazioni rappresentarono il 55,7% della produzione, il 53,2% l'anno successivo. Questa espansione non è stata duratura, e forse piú legata ad una favorevole congiuntura internazionale che ad una base reale di competitività [10]. Il 1989 ed il 1990 hanno infatti visto calare sensibilmente il flusso di esportazioni anche a seguito di misure *anti-dumping* adottate dal governo canadese. Anche se questo calo è stato compensato da un ampliamento del mercato interno, l'industria automobilistica coreana non ha ancora basi sufficientemente ampie per affermarsi saldamente sui mercati dei paesi avanzati.

FIG. 3. Corea – Produzione ed Esportazione di Autoveicoli, 1975-1989
(Milioni di Veicoli)



Fonte: come Fig. 1.

[10] Questi anni vengono definiti dagli economisti coreani come il periodo dei *three lows*, identificando in un favorevole tasso di cambio con il dollaro (e dollaro/Yen), nella riduzione del prezzo del petrolio e nell'abbassamento dei tassi di interesse sul debito internazionale i principali fattori che hanno influito positivamente sulla crescita dell'economia coreana (vedi: SONG, 1990).

Da un confronto di indicatori quali il livello di produzione, esportazioni, il raggiungimento della "produzione di massa" [11] ed il livello di *local content* conseguito, risulta che fra lo sviluppo delle industrie nei due paesi vi è un intervallo temporale di circa venti anni (il livello della produzione coreana eguaglia quella giapponese degli anni '60); lo stesso divario separa a grandi linee il grado di sviluppo economico generale [12]. L'industria automobilistica coreana, smentendo questo approccio deterministico, ha tuttavia raggiunto una capacità produttiva pari a quella del Giappone degli anni '70 in un lasso temporale di gran lunga inferiore. Ciò è stato reso possibile dalla accessibilità alla tecnologia unita ad un'elevata capacità di assorbimento della stessa (*absorptive capacity* [13]); tuttavia, questa rapidità ha favorito il perpetuarsi di alcune inefficienze all'interno del processo produttivo ora difficili da superare.

Un'analisi delle principali misure di politica economica adottate nei confronti dell'industria automobilistica in Giappone e Corea consente di chiarire sia lo sviluppo che il presente assetto dell'industria automobilistica. Nell'*iter* della politica economica coreana è possibile ravvisare, in poco meno di un ventennio, tutte le principali misure già adottate dal Giappone alcuni decenni prima. Grazie all'import di tecnologia effettuato, ogni fase dello sviluppo (con i passaggi dall'assemblaggio di SDK a CKD al 99% di *local content*) è stata realizzata in Corea nel giro di pochissimi anni. Oltre alle misure protezionistiche nei confronti delle importazioni di veicoli finiti e parti dall'estero [14], e sovvenzioni e condizioni privilegiate di vario genere, sono da evidenziare le politiche nei confronti dello sviluppo del "national car" (nel 1955 in Giappone e nel 1981 in Corea), ed il *Measures for the Integration of the Motor Industry Act* adottato prima in Giappone e solo molto piú tardi in Corea. Con esso veniva identificato dal Governo il numero ideale di case produttrici che era inferiore a quello delle case esistenti ed operanti; venivano cosí auspicate fusioni allo scopo di raggiungere quella che veniva considerata essere una scala produttiva efficiente. Provvedimenti analoghi riguardarono anche il tipo di produzione cui ogni azienda doveva dedicarsi. In tal senso negli anni compresi fra il 1980 e il 1986 la Kia

[11] Identificata con il raggiungimento della capacità produttiva di un milione di unità.

[12] Secondo stime di economisti coreani basate, fra l'altro, sul livello di reddito pro-capite si tratta di venti-venticinque anni (SONG, 1990).

[13] Questa capacità di assorbire e migliorare le tecnologie importate viene considerata da molti economisti come il principale fattore in grado di spiegare l'enorme crescita registrata in specifici settori economici. Questa ipotesi, già avanzata per il settore tessile-manifatturiero (RHEE-LARSON, PURSELL, 1984), è stata estesa a settori con piú elevato contenuto tecnologico (vedi specialmente KIM, 1984 e PARK, 1990).

[14] Realizzate con il Protection System for the Automobile Industry del 1962.

Motors si specializzò nella produzione di veicoli commerciali, mentre impegnate nella produzione di autoveicoli rimanevano la Hyundai Motors e la Daewoo Motors. Nel Giappone dell'anteguerra analoghe regolamentazioni erano state già imposte, e la produzione di veicoli era autorizzata esclusivamente a scopi bellici. Il fatto che tali politiche restrittive nei confronti dell'industria potessero venir adottate, trova spiegazione nel particolare rapporto esistente fra struttura governativa ed industria. Da carattere impositivo, esso è gradualmente divenuto sempre piú collaborativo e consultivo. L'applicazione di tali misure non sarebbe piú possibile nel Giappone odierno. Ancora diverso è il caso della Corea, dove le industrie sono ancora molto dipendenti in quanto a risorse finanziarie ed agevolazioni dal governo che gode ancora di una notevole influenza sulla gestione delle imprese. È indubbio che tale legame si affievolirà con la crescita economica e con la capacità delle industrie di autofinanziarsi. Da quanto emerso finora dalle misure di politica economica adottate nei confronti del settore automobilistico, risulta evidente come la Corea si sia ispirata al modello fornito dal Giappone nella speranza di riproporne il successo. Riuscendovi in buona parte. Tuttavia è al ritardo con il quale il governo coreano ha regolamentato l'organizzazione dei produttori di parti e componenti che si deve attribuire l'origine delle attuali difficoltà dell'industria automobilistica coreana. Le misure erano infatti dirette soprattutto a regolamentare l'attività degli assemblatori, trascurando lo sviluppo qualitativo e il coordinamento delle *ancillary firms* [15]. Mentre in Giappone la normativa atta a fissare i criteri per la standardizzazione delle parti risale al 1938 [16], in Corea bisogna attendere il 1986. Il governo coreano, al fine di accelerare la crescita della produzione di veicoli, la loro qualità e conseguente esportabilità, ha condotto una politica solo parziale nei confronti delle parti e componenti, tollerandone l'importazione, in particolare dal Giappone. Ne è risultato un doppio ordine di problemi: favorire il perpetuarsi di una grave inefficienza nel sistema di organizzazione produttiva, e la creazione di una forte dipendenza dell'industria automobilistica coreana nei confronti di quella giapponese. In corrispondenza di un diminuito flusso di importazioni di veicoli finiti dal Giappone si è registrato un aumento nelle importazioni di parti e componenti [17]. Vi è oggi in Corea un

[15] Vedi: SHITAGAWA, FUJISAWA e KIO (1986), e ODAKA, OHNO ed ADACHI (1988) per un confronto con lo sviluppo del sistema giapponese.

[16] Registration of Qualified Auto Parts and Materials.

[17] Appurare l'entità dei flussi di parti e componenti in entrata e in uscita dal paese non è cosa semplice. I dati riportati da fonti governative coreane differiscono notevolmente a seconda dell'istituto od ente che ne cura la pubblicazione (Vedi: KAMA, 1990a, KAICA, 1990). Non sussiste inoltre corrispondenza con i flussi di esportazioni dichiarate da fonti giapponesi

doppio mercato di parti e componenti: quelle prodotte in Corea e assemblate su veicoli commercializzati all'interno, e quelle importate e montate su veicoli destinati ai mercati esteri.

Per ciò che riguarda l'acquisizione di tecnologia nel settore automobilistico, Giappone e Corea rappresentano due casi atipici; seguendo una politica simile fra loro, hanno cercato di limitare al massimo ogni tipo di collaborazione estera che comportasse un coinvolgimento diretto del partner straniero nella produzione. Infatti, in particolare nel caso dell'industria automobilistica, la realizzazione di *joint ventures* fra paesi avanzati in cui la produzione di auto ha raggiunto uno stadio maturo, e paesi che intendono sviluppare una produzione nazionale di veicoli è un fenomeno molto frequente [18]. Alla protezione del mercato domestico dall'importazione di veicoli stranieri si è aggiunta una legislazione restrittiva nei confronti degli investimenti dall'estero. Questa legislazione ha interessato il settore automobilistico fino al 1971 in Giappone e fino al 1989 in Corea. Al fine di sviluppare l'industria automobilistica nazionale, Giappone e Corea hanno preferito acquisire la tecnologia necessaria attraverso forme cosiddette *unbounded*, ovvero tramite l'acquisto diretto di brevetti o tramite contratti di *licensing*. Fu infatti mediante contratti di *licensing* stipulati con una scadenza di 6-8 anni che il Giappone realizzò la conversione a scopi civili dell'industria, acquisendo la tecnologia necessaria a produrre autoveicoli [19] invece di veicoli speciali, per la produzione dei quali la qualità aveva ormai raggiunto livelli soddisfacenti. Entro i termini di scadenza dei contratti le aziende giapponesi avevano acquisito la tecnologia necessaria a produrre i veicoli. A partire dal 1965, quando il 100% di *local content* fu raggiunto, tutti gli sforzi si concentrarono sulla competitività, ovvero sui miglioramenti qualitativi necessari a guadagnare il mercato internazionale.

Anche la Corea ha privilegiato forme *unbounded* di acquisizione tecnologica [20] perseguendo la cosiddetta *"goes it alone policy"*, ma una base produttiva ancora poco solida e la rapidità alla quale l'industria è stata indotta a crescere, (per finanziare il suo sviluppo), ha favorito la creazione di un legame di dipendenza dalle fonti di tecnologia. La Corea è divenuta oggi la principale importatrice di tecnologia giapponese [21] relativa al settore auto di tutta la regione asiatica, e pur avendo raggiunto il 99% di *local content* (già

(Ministry of Transport). La componente di commercio inter-industriale (tra aziende giapponesi e coreane), generalmente non dichiarata dalle aziende, contribuisce a sottostimare il fenomeno.

[18] Oman (1989).

[19] Iwakishi (1968).

[20] Kaica (1989).

[21] Egashira (1986).

nel 1976 il *local content* era del 96%) rimane ancora dipendente per la produzione e progettazione di alcune componenti [22].

Il conseguimento del 100% di *local content* ed il contenimento del costo del lavoro sono i due principali problemi che l'industria automobilistica coreana deve risolvere per conseguire una reale base concorrenziale che senz'altro la vedrà presente in modo crescente anche sui mercati europei.

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POLITICAL ECONOMY AND DEVELOPMENT OF THE MOTOR INDUSTRY IN JAPAN AND KOREA

This study tries to define the characteristics of the development of the motor industry in Japan and in Korea by considering the specific policies adopted by the government toward the sector. The government played in both countries an essential role in the industry's growth and in many aspects the policy adopted has been very similar. Korea followed the example offered in earlier times by Japan, achieving a sectoral development unique among other NIEs auto producers, thanks to its capacity of adapting and absorbing imported technology. Still some problems undermine its competitiveness and have to be overcome to gain a real production efficiency. The links existing between Japan and Korea within the motor industry confirm the role Japan has in the Asian region as model and partner.

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INDUSTRIAL RESTRUCTURING AND AGRICULTURAL ORGANIZATION IN JAPAN

by
HIROYUKI TAKEYA *

This article is concerned with the impact of industrial restructuring on farming and employment in rural Japan. I wish to analyze, as an example, Toyota's development of the automotive industry in the Aichi Prefecture. Aichi, with its established Japanese style production system, can be considered a typical prefecture.

1. *Reasons for Choosing the Automobile Industry*

Two points should be kept in mind before starting this analysis. The first concerns the Japanese automobile industry, and the importance of considering Toyota as typical of the industry. The development of the Japanese automobile industry began in the late 1950's, and since then the automobile industry has assumed a leading role in the Japanese economy. In 1960, for example, the output of the automobile industry, in value terms, accounted for less than 5.2% of the total manufacturing output. By 1970, this percentage had increased to 7.8%, and by 1980 to 9.9%. In 1985 the figure had reached 11.9%. In terms of exports (FOB), motor vehicles accounted for 2.4% of exports in 1960, 9.7% of exports in 1970, and 21.9% in 1980. By 1986, a full 25.6% of Japanese exports consisted of motor vehicles. Particularly impressive was the growth of exports from the 1970's to the mid 1980's. It is clear that the rapid growth of the Japanese economy has been dependent on the development of the automobile industry.

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Today, there are 10 enterprises that produce motor vehicles in Japan. Toyota Motor Co. is the largest [1].

In 1989 Toyota produced 3,980,000 units, thus accounting for 30% of Japanese production. Toyota's domestic sales of new vehicles reached a record of 2,300,000 units, some 41% of the domestic market. These figures make Toyota Motor Co. the leading Japanese firm in the industry. The study of Toyota, therefore, will give us a key to the understanding of the features of the Japanese economy and its industrial restructuring.

The second point that must be considered before beginning this analysis is the impact of the industrial structure on labor markets. In the last 13 years, the Aichi prefecture, home to most of the Toyota factories, has led Japan in terms of value of manufacturing output. The Aichi prefecture has seen the vast development of both inland and coastal areas. There are now some 107 km^2 of industrial areas, 25 km^2 of which on coastal lands. The Toyota Motor Co. is located primarily in the Nishimikawa region [2]. This region, before the period of "high economic growth", had seen the development of specialized textile manufacturing. These industries were located in six cities, and agriculture remained the main industry in the rural areas. In 1960, 33% of the labor force was employed in agriculture, and farm households accounted for 42% of the total population. Since that time, the pillar of employment in the region has shifted from the textile industry to the automotive industry. This switch towards the automotive industry was accelerated during and after the late 1970's by the micro-electronics revolution (Figure 1). Between 1960 and 1986, the number of persons employed in manufacturing grew threefold, from 115,000 to 312,000. It should be remembered that the supply of labor from rural areas has been an indispensable component of high economic growth in Japan.

Industrialization brought an increase in the urbanization of the region. The inhabitants of the Nishimikawa region increased from 698,000 in 1960 to 1,237,000 in 1985. This led to an expansion of the labor market in the wholesale, retail and service areas. Nevertheless, some 51% of the labor force is employed either for the automobile industry or for some automobile related industry.

Keeping in mind the conditions mentioned above, we can proceed in our study of the impact of industrial restructuring on agriculture and rural areas. In particular, we will try to understand the effects of the Toyota

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[1] According to a Wako Economic Institute Report, Toyota Motor Co. remained the largest Japanese enterprise in 1989. *Asahi Shinbun*, June 5, 1990.

[2] The Toyota Motor Co. has concentrated most of its factories and subcontracting factories in the Nishimikawa region. HIKARU (1980, p. 193).

Group and their subcontractors on agriculture and rural areas. I will address this question with respect to labor force, land use, capital formation, and the farming system.

2. *Impact of the Automobile Industry on Labor and Employment in the Surrounding Rural Areas* [3]

The growth of automobile manufacturing quickly made this industry the pillar of the regional labor market. The rapidly growing demand for labor brought tremendous change to the surrounding rural areas, and the structure of work and employment began a radical transformation. The rural agricultural labor force moved quickly into non-agricultural industries. This shift from agricultural to non-agricultural employment occurred at different speeds in different areas, and did not occur in one fluid step. The entire process, rather, progressed through several stages.

1) The first stage involved an increase in temporary workers [4]. In 1956, as Toyota Motor Co. began large scale growth, it established a system of hiring temporary workers. After 1956, total employment began to increase. In this period, the rural labor force was recruited in the form of temporary workers. In November of 1961, in fact, 5,099 of a total of 11,963 employees were temporary workers.

2) The second stage falls between 1962, when Toyota began to hire high school graduates, and 1967, when the temporary workers policy was revised. In this stage, a number of temporary employees were to be promoted to regular positions, called *Minaraikou*, one year after they were hired. The system of temporary workers had been seen as highly adjustable in terms of industrial reserves, but in the second stage it began to lose this quality. Seasonal workers, called *Kisetsukou*, were hired to cope with business fluctuations. At this point, the Toyota work force in 1967 was distributed as follows: *Minaraikou* 40%, seasonal workers 19%, high school graduates 28%, workers resigned from the Self-Defense forces 4%, workers trained by the company 3%, office workers 4%, and technicians 2%.

The temporary and seasonal workers were supplied from the surrounding rural areas. Businesses began to bus workers from rural areas, and the

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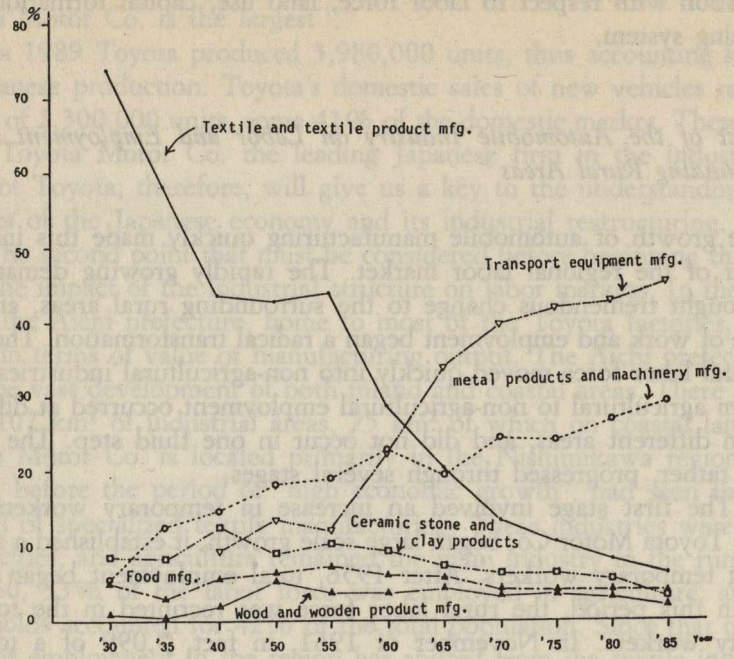
[3] Surrounding rural areas are referred to as the areas from which employees are able to commute to the Toyota Group and subcontracting enterprises. Due to improvements in transportation and to the expansion of factories into rural areas, this area is expanding.

[4] See KIYOSHI (1967, p. 228).

Fig. 1. Employment in the Nishimikawa region by industry group, percentile breakdown.



Source: *Census of Manufacturers*, MITI, various years.

area from which they recruited labor began to grow. Thus, in the second stage, the area labor force was drawn out to work for Toyota and Toyota's many subcontractors. Some of these workers were promoted from temporary to regular workers, either by Toyota or by the subcontractors. Others were employed as new commuting workers, and still others were hired on a seasonal basis. These categories, in fact, determined a stratification of the labor force. This stratification formed the basis of differences in work conditions, salaries, etc.

In other words, the first stage involved the formation of a wage category (v) for rural labor. In this stage they were drawn out primarily as temporary workers. The second stage, in comparison, witnessed stratification based on wages (V and v). This stratification resulted from differences between regular workers and seasonal or temporary employees. Further distinctions emerged as a function of whether an employee worked with the parent company or with a subcontractor.

3) The third stage occurred between 1967, when the temporary workers system was revised, and 1973, year of the oil crisis. In this stage, Toyota built factories one after the other to provide against liberalization of foreign capital. This period also saw an expansion of the subcontracting enterprises. The result was further demands on the area labor force.

Two methods were employed to increase the availability of labor. The first involved an expansion of the commuting labor force by way of improvements in the rural road network. The second method consisted of attempts by the subcontracting industries to draw labor particularly from housewives or the elderly who were difficult to bring into the factories. Part of these programs involved the establishment of subcontractors, called *Nayakoujo* (shed factory). These included both family operated businesses and small businesses that depended on a small number of employees.

Thus in addition to the increased extraction of labor from the countryside in the form of commuters, the third stage involved the establishment of branch factories in rural areas to employ middle age and elderly individuals. Some rural households themselves became subcontractors. This gave the subcontract structure a pyramid-like, stratified design. This pyramid-like structure was also seen in terms of the labor force, with the rural labor force consisting of the bottom tier. These developments also brought an increased stratification in the wage structure, as well as in the opposition between labor and capital [5].

4) The expansion of the industry reached a turning point with the onset of the oil crisis. Toyota sharply reduced the number of seasonal and temporary workers employed. Workers, mainly high school graduates, were hired only in numbers that allowed for the replacement of retirees. Subcontractors were thinned out on the basis of lower parts prices, and the *Kanban* system was forced to introduce even lower level subcontractors. It was in this fourth stage that the restructuring of Toyota and its subcontractors began.

These changes had a profound impact on the regional labor market: the employees became reluctant to change their job; subcontractors typically either shut down, or they increased investments in machinery and e-

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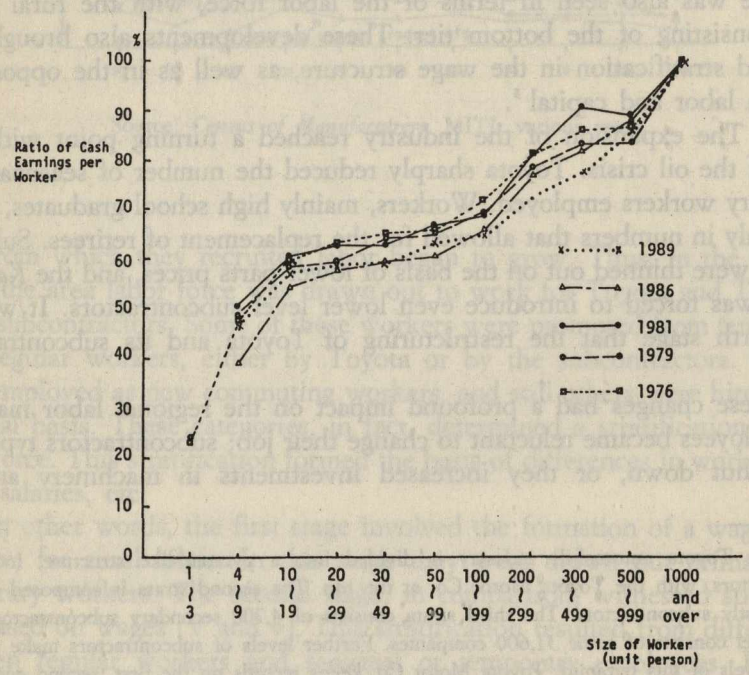
[5] The Toyota automobile industry is divided into a pyramid-like structure, including subcontractors, with the Toyota Motor Co. at the top. The second strata is composed of 168 firms, mostly subcontractors. The third strata consists of 4,700 secondary subcontractors; the fourth level consists of some 31,600 companies. Further levels of subcontractors make up the bottom levels of this pyramid. Toyota Motor Co. keeps records on the first, second and third levels of subcontractors, but not of those below the fourth. DEPARTMENT OF SMALL OR MEDIUM-SIZED ENTERPRISES (1978, pp. 168-9).

quipment and reorganized the wage scale to meet falling parts prices. In short, this means bipolarization, i.e. differentiation. Thus, the Toyota Group moved to increase efficiency and lower production costs through a revision of its subcontracting system and a reorganization of its labor market. This led to an expansion of both its domestic and export sales after the oil crisis. By 1980, production had reached 3 million units, two times 1970 production.

5) In 1981, production fell for the first time. The automobile industry had reached a new turning point. The domestic market had neared saturation, and exports, because of the growing trade imbalance, became subject to voluntary export restrictions.

The fifth stage, in the 1980's, saw the creation of a system in which the wants of the consumer were dealt with directly. The amalgamation of Toyota Jiko Co. (responsible for the production of motor vehicles) and

Fig. 2. Ratio of cash earnings per worker by size of enterprise to cash earnings per worker of enterprises with 1000 or more workers, transport equipment industry (Aichi prefecture).



Source: *Census of Manufacturers*, MITI, various years.

Toyota Jihan Co. (responsible for sales of motor vehicles) dates back to this period. This new system was aided by the micro-electronics revolution, which made it possible to implement a flexible manufacturing system that allowed for the production of a variety of vehicles in small quantities. At the same time, the production of automobiles overseas was increased. By 1986, for example, the Toyota Motor Co. was involved in the manufacturing and assembly of automobiles in 17 countries. Subcontracting enterprises followed the lead of their parent companies and also made their way into foreign countries. This period witnessed the creation of an international subcontracting system.

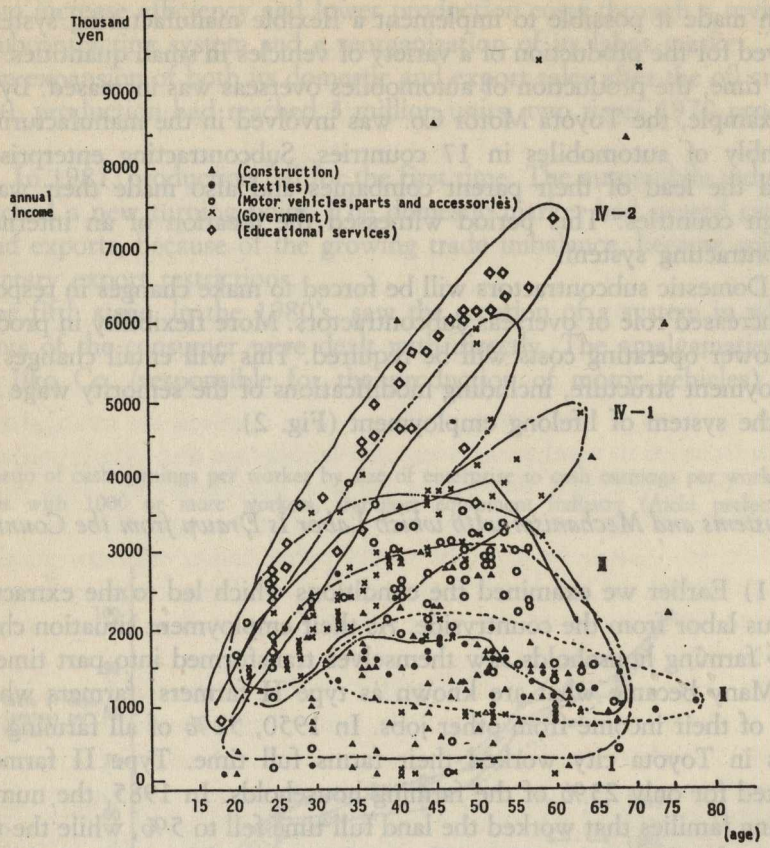
Domestic subcontractors will be forced to make changes in response to the increased role of overseas subcontractors. More flexibility in production and lower operating costs will be required. This will entail changes in the employment structure, including modifications of the seniority wage system and the system of lifelong employment (Fig. 2).

3. *Systems and Mechanism with which Labor Is Drawn from the Countryside*

1) Earlier we examined the conditions which led to the extraction of surplus labor from the countryside. As their employment situation changed, many farming households saw themselves transformed into part time farmers. Many became what are known as type II farmers; farmers who earn most of their income from other jobs. In 1950, 52% of all farming households in Toyota city worked their farms full time. Type II farmers accounted for only 23% of the farming households. In 1985, the number of farming families that worked the land full time fell to 5%, while the type II farming families rose to 88%. The total number of farm households fell to 33% between 1960 and 1985. One can see that the rural labor force, as it has come to pivot on the automobile industry, has been drastically reorganized.

On account of the difficulties involved in harnessing the rural labor force (difficulties such as commuting, etc.), two labor markets have emerged. One exists in the urbanized areas. This involves the need for labor to cummute from more rural areas. A second market for labor exists in the rural areas themselves. While the more urban markets typically involve younger workers, the rural market for labor often involves housewives and middle age or elderly people. In terms of the enterprises themselves, the more urban enterprises are generally located within the upper strata of businesses, while the more rural enterprises are found in lower positions.

Fig. 3-1. Relationship between age and annual income of male workers in Tsukude village, by industry (1977).

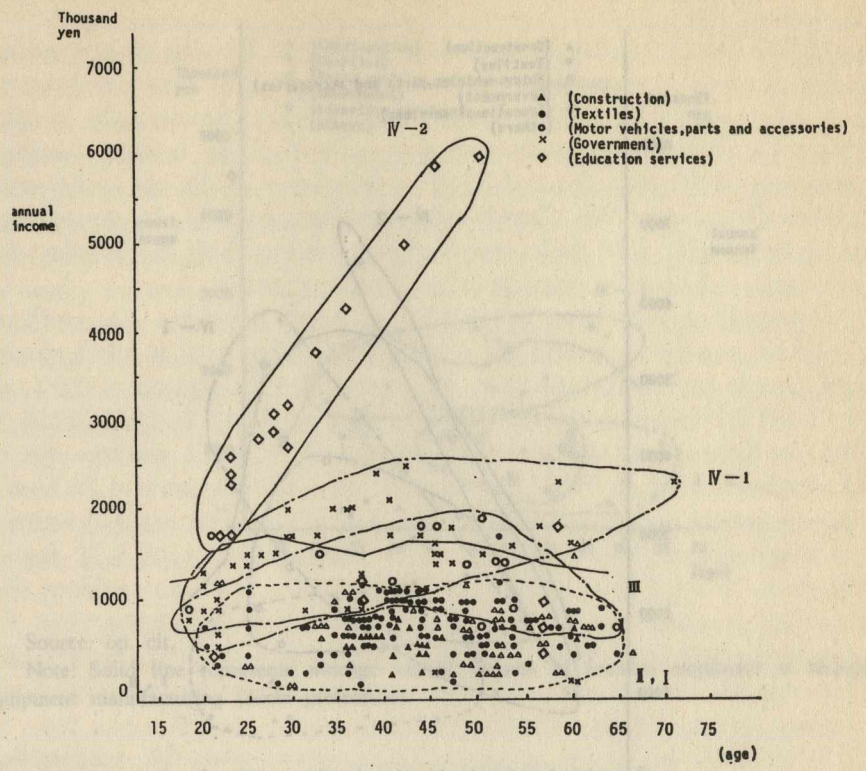


Source: Material at Tsukude village office. *Basic Survey on Wage Structure in Aichi Prefecture*, Ministry of Labour (1977).

Note: Solid line represents average annual income of male employed in machinery and equipment manufacturing (Aichi prefecture).

2) Figure 3 shows the characteristics of wages by age of workers in the Tsukude village, considered a marginal area for commuting. The solid line drawn through the middle of the graph indicates the average annual income of a worker engaged in machinery or equipment manufacturing in the Aichi prefecture. This convex line reaches its peak when workers are 50 to 55 years old. This line has the same shape as an analogous line for workers involved in the manufacturing of motor vehicles in Tsukude village.

Fig. 3-2. Relationship between age and annual income of female workers in Tsukude village, by industry (1977).



Source: op. cit.

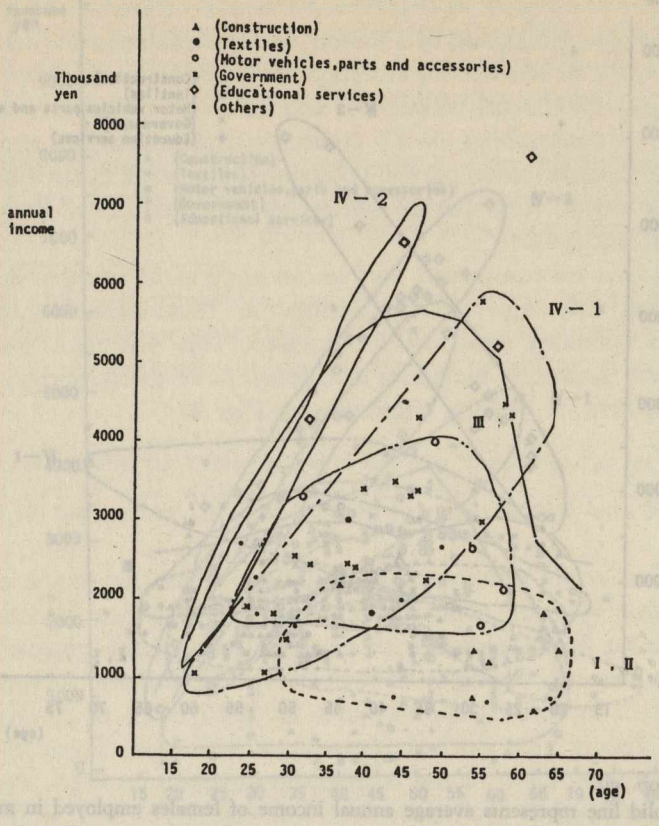
Note: Solid line represents average annual income of females employed in machinery and equipment manufacturing (Aichi prefecture).

The wages of middle age and elderly employees in Tsukude village, however, were lower than the average wages for the Aichi prefecture. Many employees had salaries 50 or 60% below the average. On the other hand, the wage disparities for the 18 to 35 year old age group is not so large. This discrepancy between wage differentials dependent upon age group is called wage disparity between generations [6].

If we compare wages across industry type, the annual income of males

[6] Similar analysis of wage disparities were done by Usami (1982, pp. 47-56) in the Thohoku region and by Syoji (1986, pp. 389-407, 469-472) in the Tokai region.

Fig. 3-3. Relationship between age and annual income of male workers in Tsukude village, by industry (1985)



Source: TAKEYA (1988).

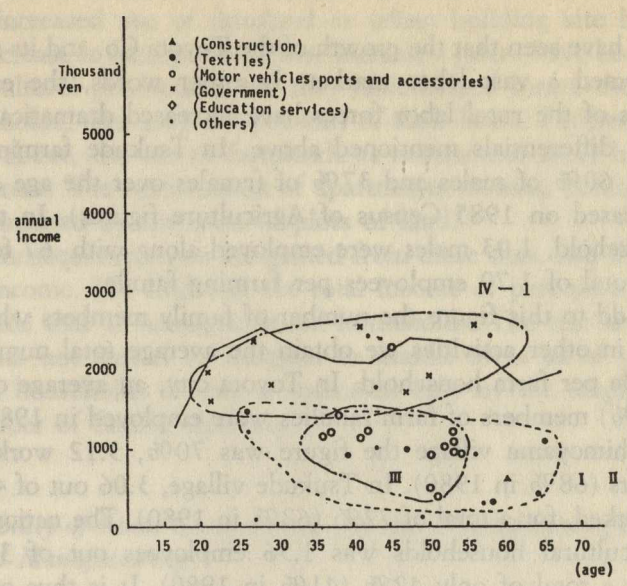
Basic Survey on Wage Structure in Aichi Prefecture, ML (1986)

Note: Solid line represents average annual income of males employed in transport equipment manufacturing (Aichi prefecture).

engaged in the production of transportation equipment was inflated by the wages in construction and in textiles manufacturing. For housewives and middle age or elderly workers, whose supply of labor exceeds demand, the wages in the manufacturing of motor vehicles was consistently depressed by the wages paid for their labor in construction and in textiles manufacturing. (Fig. 3-1, 3-2, 3-3, 3-4).

As mentioned above, wages in the Toyota Group and subcontracting

Fig. 3-4. Relationship between age and annual income of female workers in Tsukude village, by industry (1985).



Source: op. cit.

Note: Solid line represents average annual income of females employed in transport equipment manufacturing (Aichi prefecture).

enterprises correspond to a division of these enterprises into many strata. Wages at the larger, upper level enterprises are high, while wages at smaller, lower level firms tend to be low. This disparity in wages among enterprises is just as evident as the wage disparity between urban and rural areas. The commuting, urban labor market typically involves big enterprises, while the market for labor in rural and marginal areas typically involves smaller, lower level firms.

So we see that in addition to the wage disparity between generations, there exists a wage disparity between rural and urban areas. Wages in rural areas are kept low by the even lower wages in textiles and construction, and these industries also serve as pools from which to draw labor. Therefore disparities in employment and wages between different areas continue to exist in a stratified labor market.

4. *Farm Household Members Employed in Many Jobs and the Spread of the Use of Urbanized Farmland as Property* [7]

1) We have seen that the growth of the Toyota Co. and its subcontractors has formed a vast labor market. In other words, the employment opportunities of the rural labor forces have increased dramatically in spite of the wage differentials mentioned above. In Tsukude farming families, for example, 60% of males and 37% of females over the age of 16 were employed (based on 1985 Census of Agriculture figures). In the average farming household, 1.03 males were employed along with .67 females; for an average total of 1.70 employees per farming family.

If we add to this figure the number of family members who work on the farm or in other activities we obtain the average total number of employed people per farm household. In Toyota city, an average of 3.32 out of 5.12 (65%) members of farm families were employed in 1985 (64% in 1980). In Shimoyama village the figure was 70%, 3.12 workers out of 4.47 members (68% in 1980). In Tsukude village, 3.06 out of 4.26 family members worked, for a total of 72% (68% in 1980). The national average for non-agricultural households was 1.56 employees out of 3.71 family members for a total of only 42% (41% in 1980). It is thus evident that the rate of workers per household was higher for agricultural than for non-agricultural households. This, despite the fact that housewives and elderly persons were employed at low wages, led to higher household and per capita incomes in the countryside [8].

2) In addition, urban areas began to spread into the surrounding countryside. Farmlands began to be used as properties for the construction of homes, apartments, parking lots, stores etc. Income from the use of these lands further increased the total income of farm households. The growth of the Toyota Group and its subcontractors has both created a vast labor market and brought about concentrations of populations and factories. These concentrations have produced a large demand for factory sites, residential sites, roads, stores, public facilities etc. This demand for land has spilled into the surrounding countryside, leading to a diversified use of farmland. Calculating the total area of the 8 cities and 2 towns in which the Toyota Group factories are found, we find that in 1987, 231 of 841 km^2 of

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[7] TAKEYA (1987, pp. 95-104).

[8] Looking at the location of villages along national road No. 301 from Toyota City, we find that Shimoyama is the second village out of Toyota City and Tsukude is the third. These are located about 30 and 60 minutes from Toyota City respectively.

terrain is used as farmland. This reflects a decrease of 22% between 1964 and 1974, and a further 15% decrease between 1974 and 1984.

This increased use of farmland as urban building site has led to a dramatic increase in land prices. These increased prices have been detrimental to agricultural production, but they have helped insure the survival of farm households, who may sell portions of their lands. Furthermore, as we mentioned above, the use of farmlands as commercial areas has spread to suburban areas. The construction of apartments, houses, parking lots, etc., are often financed by the sales of plots of land.

As a consequence, rents are gained from these sites, and these also add to family income. We find that the total income of part time farm households exceeds that of non-agricultural households. The rise in land prices, however, has not spread to marginal or middle areas as of yet. In these areas, farm households income is increased only by the employment of a higher number of family members.

5. *The Stability of Rural Communities and the Development of Both Agriculture and Manufacturing* [9]

1) Employment at low wages in rural areas has become a well established system. This is a source of strength for the Toyota Group and brings about a superficial stability in these rural communities. For young workers in rural areas, Toyota offers good chances of regular employment. This strengthens the system. However, given the establishment of a flexible manufacturing system and the recent formation of an international subcontracting system, employees of subcontracting firms in rural areas cannot be assured of stable employment.

2) Finally, I would like to analyze the relationship between the Toyota Group and the production of agriculture in surrounding rural areas.

The Nishimikawa region is famous for being an area of concentrated industries. In terms of agriculture, the region is known for its relatively large scale contract farming system. The system of contracting farming involves the granting of farm management to individuals or groups of individuals. In effect, this system consists of farming on rented land. In the Takatana district of Anjyo city, where Nippon Denso Co. is located, 9 farmers have joined together and established a cooperative group, named Takatana Einoukumiai, which is employed in contract farming. In 1989 this

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[9] TAKEYA (1987, pp. 109-113).

group was managing the farming of 119ha and had additional contracts for the use and rearrangement of 69ha paddy field and finally contracts for part of the production of rice on 30ha. In all this group harvested a total of 83ha of rice, 105ha of wheat, and 13ha of soybeans. When compared to the average size of a Japanese farm, this gives us an idea of the large scale contracts this group enters into. Because the average Japanese farm covers only 1ha, the typical farmer works his farm only part time. In the Anjyo district, contract farming has grown to encompass 26 groups including 119 farmers. Two contract farming groups have also been formed in the Takaoka district of Toyota City. The expansion of contract farming in Japan is shown in Table 1.

TABLE 1
NUMBER OF JAPANESE FARMS JOINING FARMING ORGANIZATIONS
(UNITS: 1,000 FARMS, %)

Type of Organization	1972	1976	1985
Total	1,207 (24.1)	1,618 (33.9)	2,313 (52.9)
Joint use of agri. machines	467 (9.3)	617 (12.9)	876 (20.0)
Group agreement on crop farming	208 (4.1)	197 (4.1)	394 (9.0)
Contract farming	434 (8.6)	684 (14.3)	1,043 (23.8)
Stock raising	98 (2.0)	121 (2.5)	

Source: *Report on Survey of Organization of Agricultural Production.* Ministry of Agriculture, Forestry and Fisheries, 1987.

Notes: 1) figures in parenthesis show the ratio of farms joining farming organizations to total farms, 2) Data for livestock raised in 1985 is unavailable.

Contract farming began to increase as the number of part time factory workers increased, and continued to grow as workers shifted from agriculture to industry. Group contracts on rice farming began in connection with

Toyota's aforementioned increase in the use of rural labor. In 1964 the practice grew as part time workers contracted out parts of their rice production (plowing, planting, harvesting, etc). This coincided with the second stage of labor movement, when many rural workers became permanent employees. Full contract farming, in which a part time farmer contracts his land to full time farmers, began in conjunction with the third stage of the transformation of labor, which had firmly established the stratification of the rural labor force. As production expanded with the use of the subcontracting system, part time workers shifted more and more towards industry, and the use of full contract farming continued to increase.

Based on figures from the agricultural Census, the number of farms in the Aichi prefecture that cover between 0.5 and 2.5ha have decreased between 1970 and 1985. Farms larger than 2.5ha, on the other hand, have increased. The same trend is found for the nation as a whole (with the exception of Hokkaido). Remarkably, the number of farms that are 0.3ha and less have increased. While part-time farming on small farms has in fact increased, farming on a large scale has grown much more.

Furthermore, one must not overlook the intensive farming that is developing in suburban areas. As far as the number of intensive farms is concerned, one finds that they greatly exceed the number of contract farms. Intensive farms are organized over large areas for joint use of machinery and facilities and include agreements on farming. The organization provides for the coordination of production, processing, packaging and sale of produce.

Thus the industrialization and urbanization in the Nishimikawa region has brought about a remarkable increase in the number of part-time farming family members employed off the farm. At the same time, large numbers of farms have become engaged in either contract farming or intensive farming arrangements, both of which involve large amounts of investment. We should not forget, however, that the total agricultural production of the region has fallen. If, for instance, we look at agricultural production in the 8 cities and 2 towns in which the Toyota Group is located, we find that land on which rice was planted fell from 23,000ha in 1968 to 11,592ha in 1988, a decrease of 50%. Land on which vegetables were planted has fallen from 6,044ha to 3,877ha (a 36% decrease). The number of chickens raised decreased 13%, while dairy cattle, beef cattle and pork grew 20%, 48% and 4% respectively.

Gross agricultural output decreased 12% between 1968 and 1988 in real value, and value added decreased 35% in the same period. It is therefore clear that total agricultural production has decreased. At the same time, however, industrialization has not completely eliminated agriculture

in the region. As we have seen, the region has in fact seen the formation of newly developing farming arrangements.

There are two reasons for this development. The first involves the increased income of farm families through their employment in industry. This increased income has led many farmers to rent out farmland at low rates. The second was the expansion of markets for produce in Nagoya and in other surrounding cities. These factors encouraged the development of farming in the suburbs.

In the early 1980's, these developing farms were struck with sharp declines in produce prices brought on by overproduction and by competition from other areas. These falling prices brought great difficulties. New responses were developed to meet this crisis, including; (1) the organization of almost all farms in a community into a larger structure that is managed as one farm, (2) advances in mixed farming, (3) the introduction of processing and more direct connections to consumers, (4) the use of biotechnology, (5) the production of a wider variety of products, such as organic products, (6) the use of computers and information network systems, etc.

In terms of the organization of farms (1), contract farms are joined to form a group so that they may improve scale production and avoid excessive investment by sharing machinery and facilities. As these groups become more integrated, members within the group begin to specialize, and the farms are organized as businesses. In larger organizations with large investments, these groups participate in the innovation of productive processes and technology.

In terms of the processing of products (3), farmers begin to take an increasing interest in post-harvest activity. The added value of goods is increased through processing or through delivery of goods. Furthermore, computers are used in the planning of market strategy, financial projections, the management of livestock, analysis of technology and the control of complex greenhouse environments.

Despite the effects of overproduction and stiff competition, the development of farming in this region continues to show the energy necessary for innovation and reorganization. This point should be noted as one aspect of the restructuring of industry.

There remain, of course, significant differences between the growth of the automobile industry and the growth of these developing farms. One must remember that the growth of new farming organizations is occurring in the context of a decrease in the total agricultural production of the region. The growth of these new farms is in fact insufficient to compensate

for the retreating farmlands. The natural results of all the above will probably be an expansion of the disparities among regions.

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RISTRUTTURAZIONE INDUSTRIALE E ORGANIZZAZIONE AGRICOLA IN GIAPPONE

L'articolo esamina l'industria automobilistica del gruppo Toyota come caso tipico dell'impatto della ristrutturazione industriale sull'agricoltura e sull'occupazione in Giappone. Gli aspetti trattati sono: lo sviluppo del sistema del lavoro eseguito all'esterno dell'azienda madre attraverso contratti di appalto e subappalto, i meccanismi con i quali il lavoro proviene dalle campagne, il diffondersi del mercato del lavoro nelle zone rurali, le differenze salariali fra le generazioni. La progressiva trasformazione del terreno agricolo in zone urbane e suburbane ha come conseguenza la diminuzione della produzione agricola complessiva nonostante l'uso intensivo del terreno agricolo e le innovazioni nelle tecniche di coltivazione.

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INDUSTRIALIZATION AND TECHNOLOGICAL LINKAGE BETWEEN AGRICULTURE AND INDUSTRY IN CHINA

WITH A DISCUSSION ON THE JAPANESE EXPERIENCE

by
LIQUN JIA *

I. *Introduction*

Since 1985, China's economic reform has faced some serious problems: the stagnation in agriculture, the wider gap between industrial and agricultural growth, the continuing biased investment towards industrial sectors, the serious inflation in agricultural products and other consumer goods, and the unsatisfactory employment structure and income distribution between urban and rural areas. These troubles force the policy-maker to reconsider the concept of balanced development as well as the effective technological linkage between industry and agriculture. The fundamental questions focus on the following points. (1) What kind of balanced development between the two sectors would be suitable to China's present economic development stage. (2) What are the main factors that substantially impair the establishment of a dynamic and organic technological linkage between the two sectors. (3) What possible way could be found to adjust the present structure and solve the dilemma. In order to answer these questions in a right way, we have to make theoretical and empirical analyses on the technological linkage between industry and agriculture during the process of industrialization in China.

In this paper, we discuss the above questions beginning in Section II with an analysis of the three stages of industrialization and correspondingly, the different characteristics of the linkage between industry and agriculture

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during the three stages. The emphasis will be on how different patterns of technological evolution and employment structural change in developed and developing countries affect the dynamic linkage between both sectors. Section III will review the Chinese industrialization process and analyse the dichotomy between industry and agriculture. Section IV will discuss the causes impeding the establishment of the technological linkage between both sectors. In Section V, the Japanese experience is referred to and the possible countermeasures for the Chinese to improve their technological linkage of both sectors are discussed. Concluding remarks will be presented in Section VI of the paper.

II. *The Development Stages of Industrialization and the Technological Linkage between Industry and Agriculture*

With increasing production, raising national income and spreading its benefits widely by expanding employment opportunities, industrialization has been regarded as an historical progress. As a necessary evolution from traditional economy to modern economy, the industrialization process must be accompanied by a dynamic reallocation of economic resources between industry and agriculture. With the expansion of manufacture, agricultural resources have gradually shifted into the industrial sectors. Therefore, the change of the production structure tends to increase the share of industrial production and decrease that of agricultural production. Simultaneously, the change of the employment structure follows the same trend. The whole process of industrialization can be divided into three different development stages in terms of the change of production and employment structure.

The first stage: the initial industrial development stage begins with a primitive capital accumulation. At this stage capital accumulation takes place without technological progress. The extensive growth by the large injection of capital and labour into industrial sectors is the main technological characteristic: "It is the period of manufacture proper based on the division of labour to use labour more productively on an enlarged organization by amassing more plants and more workers to produce more of the same output in the same way" [1]. Owing to an industrial priority policy, industry begins a rapid expansion and its production growth is much faster than that of agricultural production. The share of industry in relation to agriculture in

[1] For a detailed discussion about extensive and intensive industrial development see MAITRA (1980, Ch. II and III; 1986, Ch. 2; and 1991).

total output and employment and the ratio of urban population can indicate the pace of industrialization. According to some cross-country studies [2], by the end of this first industrial development stage, the average output proportion between industry and agriculture is 6:4, the share of employment in agriculture is 60 percent, and the rate of the urban population is around 35 percent.

At this initial stage of industrial development, the main characteristic of the linkage between industry and agriculture is that agriculture supports industry, i.e., agricultural sectors provide food products, raw materials, capital outlay, labour force and market to industrial sectors. That is to say, the initial industrial expansion has to rely mainly on the agricultural accumulation.

In transferring resources, the state intervention can stimulate a rapid industrial accumulation by a policy protecting industry. The government, however, must carefully deal with the contradiction between the demand and the supply of agricultural resources. As viewed from the demand, the more resources are drained from agriculture, the faster industrial expansion will be and the shorter the time needed for industrial primitive accumulation. However, viewing from the supply side, if the resources from the agricultural sectors are too many, this impairs agricultural reproduction, and thereafter slows down its growth speed and reduces the future supply of agricultural products. As a result, industrial expansion is eventually impeded. Therefore, there is a dilemma between getting more agricultural surplus and keeping effective agricultural growth. To handle this contradiction, the policy-maker should consider a balanced development between industrial expansion and agricultural growth. In order to keep the resources drained from agriculture within the agricultural supporting capability, a basic principle is first of all to guarantee the agricultural reproduction and a gradual increase of the peasants' income, and then to extract the rest of the agricultural surplus to support industrialization.

The second stage: the middle industrial development stage begins with the end of the primitive capital accumulation. At this stage, the industrial sectors lacking the capability of self-adjustment and self-improvement have established a relatively solid industrial basis for self-development and self-support. Therefore, the further expansion of industry does no longer rely on agricultural accumulation. This means that agricultural surplus can be reinvested back in the development of agriculture itself. With this kind of reinvestment or self-accumulation, agricultural growth accelerates. Therefore

[2] See FENG and LI (1989, p. 44).

the gap between industrial growth and agricultural growth tends to be narrowed and then a balanced development between both sectors appears. However, with the strengthening of industrial capability, a wide expansion of industry begins, and this leads to a larger and larger share of industrial output. Feng and Li's cross-country study shows that, by the end of the second stage, the average output proportion between industry and agriculture is around 8:2; the share of employment in agriculture is 40 percent and the rate of the urban population is 50 percent.

At this second stage, the technological linkage between industry and agriculture is realized mainly through an equal exchange between industrial products and agricultural products. So the key factor which affects the linkage is the existence of a reasonable price and market system. During this period, the government can use some important economic mechanisms, such as planning, taxation, state budget and price control, to change an unreasonable price structure, narrow the "price scissors" between industrial products and agricultural products, adjust the orientation of investment, and stimulate both sectors improving their economic efficiency, speeding up their capital accumulation and keeping their development balanced.

The third stage: the mature stage of industrialization. At this stage, the whole national economic development mainly depends on industrial accumulation. However, the share of the industrial output begins to decline owing to a rapid growth of the service sectors. Agricultural development begins to be influenced by industrial sectors. With the industry's support, the modernization of agriculture is gradually realized. Therefore the technological dichotomy between industry and agriculture tends to disappear. In the meantime, with a rapid increase of agricultural production and the peasants' income, the gap of living standards between the urban and the rural population is ultimately eliminated. This new relationship between industry and agriculture indicates that industrialization has entered a mature stage, i.e., a modern economic development era.

The above analyses of the different stages of industrialization and the technological linkage between industry and agriculture are mainly based on the shift of such resources as products, income and capital formation. Little concern has been given to the transfer of the labour force. In fact, during the process of industrialization, labour force moving from agricultural sectors to industrial sectors is also a sort of capital transfer. This industrial labour force which comes from agricultural sectors does not belong to the marginal agricultural unemployed. Those workers possess a high opportunity cost because their working skill directly derived from agricultural development can be easily absorbed by industrial sectors. Therefore, they are

valuable human capital. It is this sort of capital transfer that makes the technological linkage between industry and agriculture dynamic and self-sustaining.

In the above, the changes of employment structure in the different stages of industrialization were indicated by the figures about the share of the labour force in industry and agriculture, and the rate of population distributed in urban and rural areas. However, those figures can only reflect an average or general trend in all countries. In fact, the change of employment structure is quite different in the different countries. The following analyses will show that there are three different patterns of employment structural change in agricultural and industrial sectors.

Case 1: the pioneer industrialized country: England. In the UK, the change of the employment structure and the technological change happened simultaneously and synchronously. The industrial evolution was affected by a plentiful supply of agricultural surplus labour resulting from the change from an extensive to an intensive growth. At the initial stage of industrialization, industrial technology emerged from agriculture: "the population pressure spurred agrarian innovation leading to the Industrial Revolution" [3]. Based on the labour division, labour absorbing technology dominated in small scale industrial sectors and led to a rapid expansion of indigenous technological innovation. At this initial stage, it was agricultural sectors that provided industrial sectors a large number of surplus labour. According to Hicks, the Industrial Revolution is the rise of modern industry from a rural domestic industry combined with the growth of population. The first phase of industrialization was marked by the rapid growth of a traditionally organized rural industry which emerged as a means of temporarily employing labour to augment income of overcrowded agriculture. This helped to offset the tendency towards diminishing returns. The adoption of industry by a growing number of peasants during proto-industrialization meant that labour previously unemployed or under-employed during a part of the year was put to work on a more continuous basis [4]. This in turn resulted in the supply of more productive inputs (e.g. iron plough) to agricultural and non-food consumer sectors. Therefore an organic and dynamic technological linkage between the two sectors emerged.

Later an increasingly complex activity continued to call for a massive increase of labour. However, by the end of the 19th century, the labour supply began to expand less rapidly and with the growth of specialized trades became less homogeneous. Since the agricultural sector could not

[3] See Boserup (1981).

[4] See Hicks (1969, p. 141).

provide surplus labour as before to meet the need of industrial expansion, industrial sectors had to pave the way to intensive growth by using the existing resources more productively through improving technology, using mechanical power and developing large factory organizations. Therefore, from the end of the mid-development stage of industrialization onwards, capital intensive technology gradually dominated in the UK industrial sectors. Undoubtedly, when this kind of capital intensive technology is transferred into those countries where labour force is relatively plentiful, the labour absorption in industry and labour transfer from agriculture are restricted so that the technological linkage between the two sectors may be impaired.

Case 2: the lately developed countries. The employment structural change in these countries is slower than in England, the pioneer industrialized country. The technological development in these countries, such as France, Germany, the United States and Japan did not evolve from their own traditional stage but relied on the technology transferred from the already industrialized countries (e.g. France imported technology from the UK and so did Japan from the Western countries). Therefore their technological linkage between industry and agriculture was bound to be affected by the imported technology. According to some studies [5], in these countries, although there was no difficulty in establishing linkages between the two sectors in terms of commodities and saving and market factors, the development of a vital and dynamic linkage in terms of labour factors was still lacking. This situation can be reflected by a dynamic change in the sectoral distribution of labour force. Table 1 lists five developed and developing countries' share of agricultural employment in total employment. It indicates that labour force transfer from agriculture in France and Japan was slower than in the UK, suggesting that to a certain extent in France and Japan the imported capital intensive technology had limited the labour force absorption into the industrial sectors. Nevertheless, the situation in France was much better than in Japan because the technology transfer to France initiated at the late extensive phase when technology was still labour absorbing while the population growth rate in France was around 0.4-0.6 percent – much lower than that in Japan. However, this problem was less acute as compared with the case of the Third World countries like India and China where a relatively higher capital intensive technology was imported after the 1950s.

Case 3: Most of the Third World countries. In these countries, indus-

[5] See, for instance, MAITRA (1991).

TABLE 1

FIVE COUNTRIES' AGRICULTURAL EMPLOYMENT AS PROPORTION OF TOTAL EMPLOYMENT

Country	Year	Proportion
England and Wales	1841	24
	1861	19
	1881	12
	1901	9
	1950	5
	1962	4
France	1788	75
	1845	62
	1866	52
	1886	48
	1906	43
	1926	39
	1951	27
	1962	20
Japan	1877-82	83
	1887-92	76
	1897-1902	70
	1907-12	63
	1920	54
	1940	42
	1953	42
	1962	30
India	1960	74
	1965	73
	1981	69
	1983	70
China	1952	83.5
	1957	81.2
	1968	81.7
	1978	70.7
	1987	60.1

Sources: The data of England and Wales, France, Japan and India are from MAITRA (1991) and the data of China are from *Chinese Statistic Yearbook* (1988, p. 157).

trial sectors had a very limited capability of absorbing surplus agricultural labour force, so the change of the employment structure lagged quite far behind the change of the output structure for both sectors. The establish-

ment of modern industrial sectors in most Third World countries was mainly based on the imported technology which came directly or indirectly from the Western developed countries. As we know, since the middle of the 20th century, the industrialization in most developed countries has entered a modern phase of intensive growth and a relatively productive and high capital intensive technology has prevailed in their industrial sectors. When this kind of technology was introduced into the underdeveloped Third World countries where a high population growth pressure was a dramatic problem and the factor endowment was largely offset by a surplus of agricultural labour, it not only prevented modern industry from absorbing more labour forces but also hindered the increase of productivity in agriculture. Therefore the dichotomy between agriculture and industry became worse and worse.

Let us analyse the growing productivity gap between agriculture and industry in India in terms of the differences in ability to absorb labour productively as technology changed. In 1960, the 74 percent of the labour force of India engaged in agriculture contributed 50 percent of national income, while 20 percent of national income was contributed by industrial sectors with 11 percent of the labour force. In 1981, agriculture's share of national income dropped to 37 percent but the change of agricultural labour force kept stagnant (only dropped 5 percentage points to 69 percent in over twenty years). And the industry's share of national income went up to 26 percent but that of the labour force by only 13 percent, which indicated the use of highly capital intensive technology [6]. The net result was that the gap of productivity between industry and agriculture widened instead of being reduced.

III. *The Chinese Industrialization and the Linkage between Industry and Agriculture during the Last Forty Years*

To judge whether the present Chinese industrial and agricultural development is well coordinated and to analyse the economic and technological linkage between industry and agriculture in China we have to examine the stage the Chinese industrialization is presently going through.

Since the early 1950s, the Chinese industrialization has been going on for forty years. Throughout this historical process, we can find that the Chinese industrialization has the following three characteristics.

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[6] See MAITRA (1991).

First: low starting point and poor technological foundation. In 1952, the Chinese per capita GNP was less than one hundred US dollars, the share of net industrial output in the total material product was 23 percent, about 83.5 percent of the labour force was engaged in agriculture, and the urban population accounted only for 10 percent of the total population. It was under these bad conditions that China began her industrializing construction.

Second: priority was given to heavy industry and large and medium state-owned enterprises. This biased policy has led to a neglect of the development of the indigenous technology and stimulated an over-demand for capital intensive technology which had to be imported from overseas.

In spite of her autarkic, import-substitution policy for promoting national independence, learning by doing, and self reliance in the long run, China actually depended heavily on the Soviet technological aid at the beginning of her industrialization. In the 1950s, China introduced 156 large scale industrial projects from the Soviet Union and Eastern European countries. Up to 1957, about 595 large and medium engineering plants had gone into operation and most of them were based on the USSR technological assistance. Since the early 1960s, China has been shifting towards the Japanese and Western European technological markets to meet her industrial demand for up-to-date technologies, and increasingly, towards the United States since the late 1970s.

The borrowed Western (including the Soviet Union) technology was developed in response to the need to substitute machinery for scarce labour. Its lack of application in China was bound to widen the technological gap – and at an accelerating rate – given the mounting population pressure during the past forty years. Here, we highlight some of the more dramatic technological disparities which exist within Chinese industrial enterprises. Most strikingly, as of 1987, large and medium scale industries constituted only 2 percent of all industrial enterprises, but absorbed one-third of the country's industrial labour force and two-thirds of fixed capital stock. From this they contributed 50 percent of the gross industrial output, and their turnover taxes and remitted profits accounted for 65 percent of the state revenues. Such figures indicate the much higher average capital intensity and income-generating power of large and medium enterprises, compared with their smaller counterparts. Even the medium-size enterprises were large in scale: in 1987, their levels of output, employment and capital stock were 26,14 and 33 times greater than those of small-scale enterprises. This implied

difference in average capital-labour ratio between medium and small scale enterprises was between 1 and 2.4 [7].

Third: the primitive capital accumulation for industrialization mainly relied on agriculture. To construct heavy industry and large and medium state-owned enterprises required a large financial support. Unfortunately, at that time, China could only get very limited foreign assistance. Therefore the hard task of primitive industrial capital accumulation fell to agricultural sectors. It is estimated that more than half of the industrial accumulation funds were collected or squeezed from agricultural sectors during the 1950s, 1960s and 1970s. Chinese agriculture provided funds for primitive industrial capital accumulation mainly through two channels, i.e., agricultural taxes and "the price scissors" between agricultural goods and industrial goods. According to Chinese official statistics, from 1952 to 1986, agriculture turned over 104.38 billion yuan tax revenues to the state; and through "the price scissors", the state extracted 582.4 billion yuan from agricultural sectors – over 5 times of agricultural taxes. (The difference of "the price scissors" between agricultural goods and industrial goods has increased by a big margin during the last forty years: it increased from 6.5 percent in 1952 to 40.2 percent in 1957, 52.9 percent in 1960, and 54.4 percent in 1978. After 1979, it was reduced a little bit but has increased again since 1985). Taking together agricultural taxes and the difference of "the price scissors", 686.78 billion yuan made up 18.5 percent of the total net value of agricultural output [8]. Of course, in order to work out the net agricultural contribution to industry we should deduct the state investment in agriculture. From 1952 to 1983, through financial and credit channels, the state allocated 232.6 billion yuan to agriculture as direct investment and rural relief funds – only one-third of the amount extracted from agriculture, or 6.1 percent of total net value of agricultural output. Therefore, deducting this state agricultural input, Chinese agriculture contributed 12.4 percent of its net value of output to industry without reward every year [9].

Then which stage is the present Chinese industrialization going through? According to Chinese official statistics, in 1987 the ratio of industrial output to agricultural output was 7.5: 2.5; agricultural labour force made up 60.1 percent of the national workforce and urban population was about 25 percent of the total population [10]. Compared with the corresponding figures in 1952, obviously, industrial production grew quite

[7] See KUEH (1990, p. 431).

[8] See CHEN (1988, p. 14).

[9] See FENG and LI (1989, p. 47).

[10] The ratio of industrial output to agricultural output and the proportion of agricultural

fast, but the changes of the employment structure and of the urban-rural population structure lagged far behind the change of the output structure. The former indicator implies that industrialization is going through the second stage but the latter two indicators suggest that industrialization is still at the first stage. Comprehensively, we can only say that the Chinese industrialization has basically completed primitive industrial capital accumulation and has begun to step into the second or the middle development stage.

As concerns the technological linkage between industry and agriculture, the above analysed characteristics of Chinese industrialization have the obvious implication that Chinese industry has expanded at the expense of agriculture. It is worthwhile noticing that even in the current rural reform the tendency towards ignoring, restricting even discriminating against agriculture is still a serious problem, and by contrast, industrial sectors, especially heavy industrial sectors, have continued to be given priority in development programmes. Capital investment in agriculture is depressed. The public financial resources available for agricultural capital investment, which are derived principally from land taxation, are extremely limited; while under the serious exploitation by industry, agriculture itself is actually lacking the capability of "self-reliance" even if it wants to respond to this state call. The state agricultural investment amounted to 5792 million yuan in 1979, constituting 11.1 percent of total government investment, while investment decreased to 3506 million yuan (only 3 percent of total government investment) in 1986 [11]. Consistent with the decrease of investment in physical capital construction, the investment in human capital of agriculture is also depressed. Up to now about one-fourth of the farm people are illiterate, and the school attendance rate in rural regions has tended to decline. A simple survey made in 1983 showed that around 30 percent of children aged 13-16 dropped out of the education system and 6.2 percent of them never attended school.

Undoubtedly, biased investment orientation is bound to disrupt the technological linkage between industry and agriculture. The following analyses may indicate how weak the production and employment linkages between the two sectors are.

The production linkage. – As is known, Chinese agriculture is the main supplier of the industrializing process. Besides the above mentioned direct contributions of such resources as foods, raw materials, capital funds,

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labour force are derived from *Chinese Statistic Yearbook* (1988, p. 47 and 157). The proportion of urban population is estimated by FENG and LI (1989, p. 48).

[11] See ZHU (1990).

labour force and market, agriculture also provided another indirect resource – foreign exchange to industry for the importation of capital and other production materials, through foreign trade.

Over a long period of time, China insisted on paying imported capital goods in cash, rejected foreign investment as inherently imperialistic, and practiced a form of "self-reliance" that left only marginal room for foreign trade. As the main earners of foreign exchange, agricultural sectors were forced to export a lot of products to meet the needs of foreign exchange by industrial sectors. According to Chinese statistics, in 1987 the exportation of primary products including agricultural and mineral products still made up about 35 percent of the total exported goods.

In contrast with the great agricultural contribution of physical resources to industry the industrial sector made very little contribution to agricultural modernization. After a relatively comprehensive industrial foundation was established, Chinese industrial expansion ran into a vicious "autocircle" towards self-service, i.e., industrial sectors mainly produced those capital goods which could only be utilized by themselves, instead of making the production serve the agricultural modernization. This vicious "autocircle" further widened the technological disparities between industry and agriculture. Consequently, after four decades' industrialization, agricultural work still relied mainly on animal power and manual labour. In 1985, productive fixed capital (excluding land) in agriculture was less than 2000 billion yuan: on average, only 200-250 yuan per capita for rural people; whereas it was at least 3000 yuan per capita for urban people [12].

The employment linkage. – We have noticed before that, like most of the Third World countries, in China the adoption of imported capital intensive technology and the strategy giving priority to heavy industry prevents industrial sectors from absorbing surplus agricultural labour force. Another restriction which actually hinders the movement of labour force from agriculture to industry is to be attributed to a regulation system: the urban resident registering control. Under this system urban people are offered a residence card with many privileges including enjoying the allocation of foods, fuels and houses, and getting the opportunities of education, employment, health service and other urban advantages. Without this residence permit no farming people can survive in the urban area. Therefore, by this "closed door" policy the migration out of rural areas into the urban industrial centres has been greatly prevented. Some Chinese economists

[12] See DING (1990, p. 65).

believe that this regulational restriction is stronger than the technological one in impeding the employment linkage between agriculture and industry.

Of course, on the other hand, this policy can prevent the growth of urban slums which support surplus labour but hinder the urban facilities in terms of the urban development experiments of some Latin American, Indian and African countries. However, we think that the crux of the matter for China should lie in stimulating production rather than restraining distribution and consumption. Therefore, instead of pursuing a passive and invidious closed door policy in urban areas, China would do better decentralize her economy sufficiently and liberalize the circulation of human and physical resources in order to sustain higher output growth both in agriculture and industry.

Under the above technological and regulational restrictions, the employment opportunities created by the industrial sector are very limited and they cannot even meet the demand of the urban population. From 1979 to 1987, the average annual increase of the industrial labour force was only about 3.5 percent, much slower than the increase of industrial production (per annual increase of industrial production was 12 percent). During the

TABLE 2

THE RELATIVE CONTRIBUTIONS OF AGRICULTURE, INDUSTRY AND SERVICE SECTORS TO NATIONAL OUTPUT AND LABOUR FORCE IN CHINA, 1952-87

	1952	1957	1978	1982	1987
Share in net material product (%)					
A	57.7	46.8	32.8	40.4	33.8
I	23.1	33.3	53.6	50.6	52.3
S	19.2	19.9	13.7	8.9	13.8
Share in labour force (%)					
A	83.5	81.2	70.7	68.3	60.1
I	7.4	9.0	17.4	18.5	22.3
S	9.1	9.8	11.9	13.2	17.6
Relative product per labour (%)					
A	0.7	0.6	0.5	0.6	0.6
I	3.1	3.7	3.1	2.7	2.3
S	2.1	2.0	1.2	0.7	0.8

Sources: The data are derived from *Chinese Statistic Yearbook* (1988, p. 51 and 157).
Notes: A = Agriculture, I = Industry and S = Services.

TABLE 3

FOUR COUNTRIES' RATIOS OF PRODUCTIVITY IN INDUSTRY TO PRODUCTIVITY IN AGRICULTURE

England		Japan		India		China	
1960	1981	1960	1981	1960	1981	1952	1981
1.8	0.8	3.8	3.3	2.7	3.7	4.4	4.7

Sources: The data of England, Japan and India are from MAITRA (1991) and for China's data see the sources of Table 2.

last ten years, although about 90 million peasants left agricultural production, most of them were not absorbed by industrial sectors but by service sectors and rural-township enterprises [13].

Table 2 shows a stark contrast in productivity between industry and agriculture. We notice that, in 1987, each one percent of the workforce taken from the national pool by industry contributed 2.3 percent of national income as compared with a mere 0.6 percent in the case of agriculture. Table 3 lists four countries' ratio of productivity in industry to productivity in agriculture. It indicates that China's productivity gap between agriculture and industry has widened instead of being reduced like in Japan and the UK: in Japan, the gap was high but was declining while in the UK the ratio was lower than 1 in 1981. And in India the same tendency was shown but the gap was narrower than in China.

IV. *The Factors Impeding the Establishment of the Technological Linkage between Agriculture and Industry*

The above review of the Chinese industrialization suggests that there are three major factors which substantially impair the establishment of a dynamic and organic technological linkage between Chinese agriculture and industry.

(1) Technological factor: the imported and the self-developed capital

[13] See DING (1990, p. 65).

intensive technology has restricted the expansion of labour intensive indigenous technology and the absorption of surplus agricultural labour force into industrial sectors.

(2) Policy factor: heavy industry priority policy has directed industrial sectors, especially the heavy industrial sectors, towards a biased production orientation, a sort of vicious "autocircle" which encouraged a self-service development in the industrial sectors at the expense of agricultural development.

(3) Regulational factor: an urban resident registering control has closed the door against the free movement of labour force from agriculture to industrial centres and blocked the spreading of the industrialization benefits into the agricultural sectors by giving the privileges to urban people and restricting the absorption of agricultural labour force into industry.

Further examining the matter from various angles, it is not difficult to find that the Chinese habit of self-reliance is the ideological root of the mistakes in linking up the two sectors [14]. As is well known, the Chinese see the principle of self-reliance as a matter of self-respect and honour; self-confidence and relying on one's own human and natural resources means to be capable of setting one's own goals and taking one's autonomous decisions. This fundamental principle has fostered economic, cultural, scientific and technological introversion, seclusion, inertia and autarkic development. When this principle as a guiding ideology was implemented everywhere including the areas of external relations and internal units, even in very small units, all authorities at any levels scrambled for power, resources and wealth to further their particular interests (conceiving their interests as an emphasis on self-reliance). They decried their dependence on inflows from other regions and sectors and announced their progress towards self-sufficiency in a wide variety of products which were mostly achieved by misallocating resources. This was bound to lead to protectionism and isolation all over the country. Undeniably, the economic penalties were great. The above review tends to confirm the truism that Chinese self-reliance ideology destroys the natural economic and technological coordination between regions and sectors and retards the country's technological performance and even the capacity of self-reliance.

[14] For a detailed discussion see JIA (1990, pp. 5-45).

V. *The Japanese Experience and the Possible Countermeasures for the Chinese to Achieve the Technological Linkage between Industry and Agriculture.*

Since the Chinese industrialization has stepped into the second development stage with a completion of the primitive capital accumulation and an establishment of a comprehensive industrial foundation, a new relationship between agriculture and industry as analysed in Section II is to be established. Now the basic principles for coordinating both sectors' development can be recommended as follows: the industrial sector should not squeeze agricultural resources lopsidedly any more; the agricultural sector should not provide industrial capital accumulation gratis any more; government should not continue to give the priority to industrial sectors, especially to the heavy industrial sectors; and the expansion of both industrial and agricultural sectors should rely only on their own accumulation rather than on their mutual financial support.

Of course, it is not as easy as that to readjust the old production and employment structure and well coordinate a balanced development of both sectors because some of the restrictions analysed above are going to be hard to eliminate in the immediate future. For example, although the imported and the self-developed capital intensive technological foundation has been established, the restrictions in absorbing surplus agricultural labour force and expanding the indigenous labour intensive technology still exist. What the Chinese government should consider is how to adopt some effective methods for reducing the restrictions to a minimum. From the following brief discussion about the Japanese industrialization experience, we may gain some suggestions for the Chinese situation.

Let us consider the Japanese approach to modern industrial growth: in Japan the early period of industrialization, i.e., 1880-1915, was followed by a simultaneous extensive and intensive phase during which Japan developed her own traditional technology in agricultural and small scale industries, and side by side imported relatively advanced capital, skill and technology for her modern industrial expansion. By this way, both agricultural and industrial sectors used the existing human and physical resources productively.

Concomitantly with this simultaneous extensive and intensive growth, Japan adopted a combined labour intensive technology and a capital intensive technology. Japan used her traditional agricultural technology, particularly traditional fertiliser during the Tokugawa period. The demographic pressure in agriculture combined with a traditional technology

resulted in the operation of the Law of Diminishing Returns and different developments began to emerge. Japan instead of trying to develop her traditional fertilizer, began to import modern chemical fertilizer. However, modern fertilizer at that time was less capital intensive than that which is presently used in the Third World countries. Therefore, by using this modern chemical fertilizer, Japan could pursue the same land-intensive approach to keep as much labour as possible in agriculture. While promoting modern capital intensive technology, Japan also encouraged labour intensive small industries supplying parts and accessories to large establishments (sub-contracting business) and expanded service sectors based on family labor. This process continued even after the WWII. These small scale industrial and service sectors in Japan absorbed a much larger portion of labour force than in the USA and the UK today [15].

Another valuable experience during the Japanese industrialization process is that the expansion of agriculture and light industry played a significant role as a demand-side factor which fostered the expansion of the heavy and chemical industries [16]. The interaction between these sectors generated investment opportunities. Let us take the Japanese agriculture and textile and chemical industries as examples: for heavy industrialization, agriculture played the most important role in capital accumulation, and the textile industry was the foreign currency earner. These two sectors required the development of the chemical industry which supplied fertilizer and dyestuff. The expansion of agriculture created investment opportunities for the products of the chemical industry. Then chemical expansion further increased agriculture and textile inputs and outputs. Thus the well organized circle among these sectors in which one sector's investment and expansion stimulates the other's was established.

Finally, over a long prewar period the Japanese industrial expansion was characterized, like in China, by import substitution. The degree of dependence on imports, which is represented by the import ratio was only from a little under 10 percent to around 15 percent from the first half of the 1880s to the middle of the 1930s [17]. Of course, during this period, also the two openings of Japan in 1854 and 1945 were responsible for her subsequent industrial and technical virtuosity. It is worthwhile noticing here that the Japanese attained a successful assimilation of imported Western technology in a very creative way: rethinking, redesigning, remachining, retooling and repairing. In Japan, a full play of the demonstration effects

[15] See OHKAWA (1965) and MAITRA (1991).

[16] See YANAGIHARA (1989, p. 359).

[17] Ibid, pp. 369-370.

of imported Western equipments, products, personnel and blueprints stimulated the learning process inherent in indigenous technological efforts, and accelerated an overall national economic and technological take-off [18].

All of these efforts made Japan able to achieve a fundamental relationship between agriculture and industry; this process went through fluctuating phases and took a long time. Comparing Japan with the UK, France, India and China, the Japanese agriculture made much greater factor contributions, both labour and capital, to industrial growth than the Chinese and Indian agriculture, but much less than the British and French agriculture at their earlier stage (see Table 1). And so did the industrial sectors to agricultural growth by supplying chemical fertilizers, capital equipments and other products and technologies.

Undeniably, there are some limitations for the Chinese to learn from the Japanese experience due to the different development patterns, times and systems between the two countries. For example, when Japan started industrialization, the technology in the world was less capital intensive than it has been since the 1950s, therefore Japanese industry absorbed more labour force than Chinese industry did even if they both used imported technology from the Western countries. Considering the fundamental nature of the demographic change at the initial stage of industrialization, Japan faced much lower population pressure than China: in Japan, the population growth rate was less than one percent while in China it was 2.5 percent. Besides, Japan could easily support industrialization with the foreign currency earned through the exports of agricultural and textile products which in those days were much in demand on international markets. In short, as compared with China Japan was favored in terms of: (1) imports of less capital intensive technology, (2) population growth and (3) exports of agricultural and textile products. Therefore, when learning from the Japanese experience, Chinese government has to work out some special policy to reduce these objective limitations.

The following are a few policy recommendations aimed at readjusting the erratic technological linkage between Chinese industry and agriculture.

– Readjusting the price structure of agricultural and industrial goods and increasing the state agricultural investment.

Obviously, so long as "the price scissors" between agricultural and industrial goods exist, it is impossible to stop the industrial sector from draining capital resources from the agricultural sector, and so long as this

[18] See BLUMENTHAL and LEE (1985, pp. 221-224) and BIDELEUX (1985, p. 153).

draining goes on both sectors cannot realize their production expansion by relying only on their own accumulation. However, at China's present stage the condition is not ripe yet for completely eliminating "the price scissors". Considering the present inflationary pressure and the situation of public finances the government may solve the problem by such combined methods as: gradually adjusting the prices of those agricultural products which will be consumed by the urban people and of those capital goods which will be used as inputs in the agricultural production while allocating more investment funds to the agricultural sector for compensating its loss in the commodity exchange with the other sectors. More precisely, the state agricultural investment should be greater than the amount of agricultural tax revenues minus the agricultural share in the national income reallocation. Indicated by a formula:

$$A_i > A_t - A_s$$

where, A_i, A_t and A_s represent state agricultural investment, agricultural tax revenues and agricultural share in the national income reallocation, respectively.

– Readjusting the employment structure between agriculture and industry by expanding rural and township enterprises and rescinding the urban resident registering control.

The adjustment of the employment structure cannot be realized unless more indigenous technologies, labour intensive industries and small scale enterprises can be further expanded in rural and urban areas. Otherwise, eventual social disturbances arising from unemployment pressure may make the second stage of industrialization fail before any goals have been achieved. During the last ten years, Chinese rural and township enterprises have played an important role in absorbing the surplus of agricultural labour force, adjusting the traditional production structure, increasing both agricultural and industrial outputs, providing rural accumulation funds and supporting urban industrialization. Therefore it is significant to promote their development. At present, it is necessary to abolish the existing privileges of urban large and medium enterprises in order at least to create an equal opportunity for rural and township enterprises to be competitive through the development of a market allocation system.

To make the rural and urban economic reform more effective, the Chinese government should consider rescinding the urban resident registering control. Otherwise, the free movement (under the effect of the natural law) of labour force between agricultural and industrial areas cannot be

realized completely and the balance between employment structure, urban-rural population distribution and production structure cannot be achieved properly.

– *Readjusting industrial policy to stimulate the improvement of industrial efficiency.*

At the second stage of industrialization, the improvement of industrial efficiency is the most important factor for lifting agriculture from an unrewarding position of supplier of industrial accumulation, and keeping the balanced development between agriculture and industry. Chinese industry has always had the problem of a poor productivity. This problem is particularly serious now [19]. Therefore, the government should really pay great attention to it and work out some effective policy to solve it as soon as possible. The basic principle of the new policy should focus on encouraging or stimulating industrial sectors: to strengthen intensive growth by relying on their own accumulation and using the existing resources more productively, to orient industrial production towards serving agriculture and light industry, and in the meantime, to create more employment opportunities for absorbing surplus agricultural labour force.

VI. *Concluding Remarks*

This paper surveys the technological linkage between agriculture and industry in China during the last four decades of her industrialization process, analyses the factors impeding the balanced development between both sectors and suggests the possible countermeasures for dealing with the current dilemma.

Firstly, we find that the Chinese pattern of industrialization was different from that in the pioneer industrialized countries as well as from that in lately developed ones. This is the result of the adoption of a policy giving priority to heavy industry and of the introduction of relatively capital intensive technology. Secondly, we ascertain that, through forty years of industrialization, China has now completed the primitive industrial capital accumulation, established a relatively comprehensive industrial foundation and has stepped into the second development stage of industrialization. However, the benefits of industrialization have not yet spread widely into the agricultural sectors and rural areas. We notice that the allocation of

[19] For a quantitative analysis about this problem see JIA (1991).

resources was biased towards the industrial sectors, especially to the heavy industrial sectors; the orientation of industrial production was towards a lopsided self-service direction in a sort of autocircle instead of serving agricultural modernization; and the change of the employment structure in agriculture and industry was far behind the change of the production structure. Therefore, we can say that the Chinese industrial expansion was actually realized at the expense of agriculture. Thirdly, we think that there are three factors impairing the establishment of an organic and dynamic technological linkage between the two sectors: technology, policy and regulation. Fourthly, we suggest the Chinese to learn from the Japanese early industrialization experience which went through a simultaneous extensive and intensive growth with a combined capital intensive and labour intensive technology, using the advantages of investment opportunities in industry to expand agriculture and light industry first, and introducing the Western technology in such a creative way as to reach a successful assimilation of it. Other policy recommendations include: reducing "the price scissors" between agricultural and industrial products; increasing the state agricultural investment; creating employment opportunities; promoting the free movement of labour force by expanding rural-township enterprises and small scale labour intensive industries; rescinding urban resident registering controls; and stimulating the improvement of industrial efficiency.

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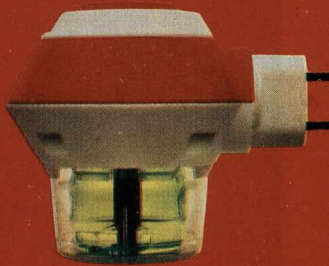
INDUSTRIALIZZAZIONE E LEGAMI TECNOLOGICI TRA AGRICOLTURA E INDUSTRIA IN CINA – CON UNA DISCUSSIONE SULL'ESPERIENZA GIAPPONESE

Questo articolo esamina il legame tecnologico tra l'agricoltura e l'industria cinesi durante il processo di industrializzazione degli ultimi quarant'anni, analizza i fattori di ostacolo che agirono negativamente sullo sviluppo equilibrato di entrambi i settori e suggerisce le possibili contromisure per affrontare i problemi presenti.

OGNI NOTTE

PER 4 NOTTI



SENZA ZANZARE

VAPE MAGIC 45 NOTTI

È UN NUOVO, AVANZATO E PERFEZIONATO ELETTROEMANATORE A RICARICA LIQUIDA. HA UN CUORE ELETTRONICO - IL TERMISTORE - CHE ASSICURA UNA DIFFUSIONE OMOGENEA DEL LIQUIDO INSETTICIDA. PER RISOLVERE IL PROBLEMA DELLE ZANZARE, BASTA INSERIRLO IN UNA PRESA DI CORRENTE. È IN GRADO DI AGIRE CON EFFICACIA COSTANTE NOTTE DOPO NOTTE. PER 45 NOTTI. SENZA BISOGNO DI RICARICA.

VAPE

NESSUNO CI PUÒ PUNGERE

Guaber

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L'Oriente rappresenta un mercato esteso tuttora in espansione e molti suoi paesi sono ricchi di risorse naturali: l'abbinamento con le sofisticate tecnologie occidentali non può che risultare vincente.
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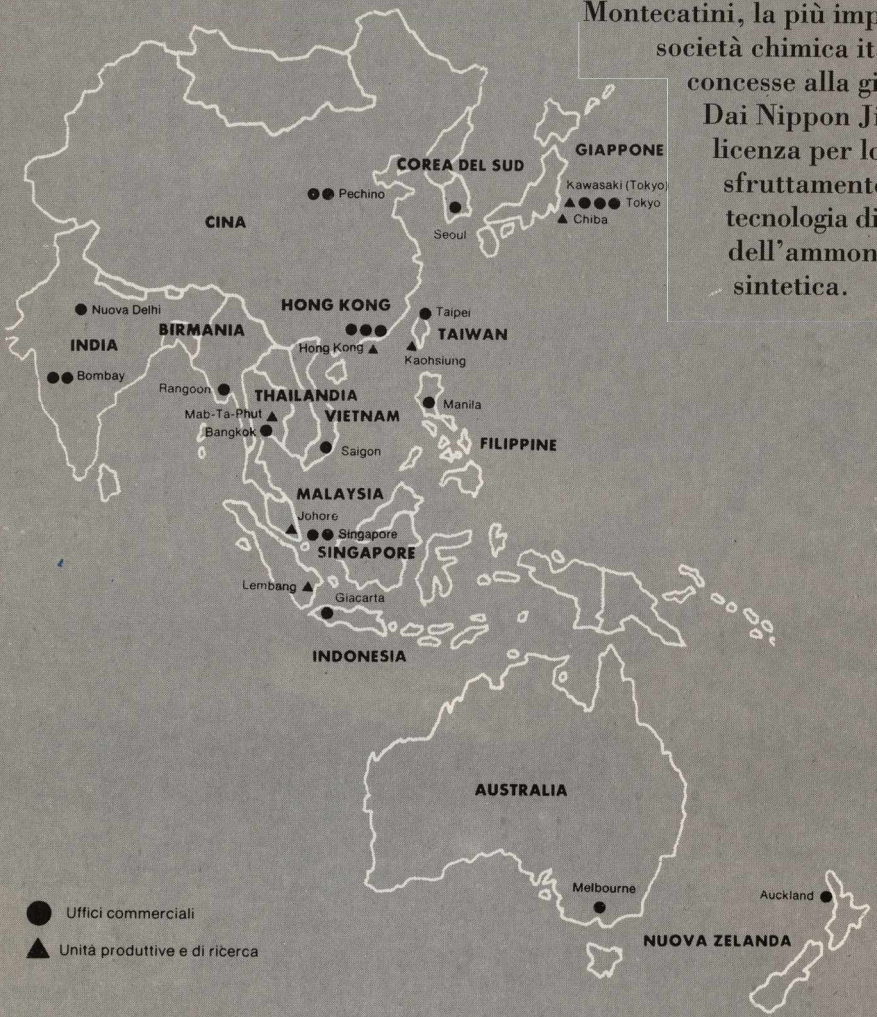

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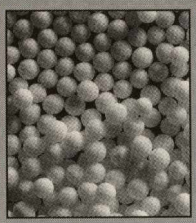

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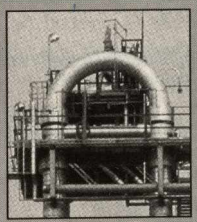

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Chiba	Giappone	• Asahimont
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Bangkok	Tailandia	• Farmitalia Carlo Erba Thailand Branch
Mab-Ta-Phut	Tailandia	• HMC Polymers (Himont)
Singapore	Singapore	• Ausimont • Tecnimont
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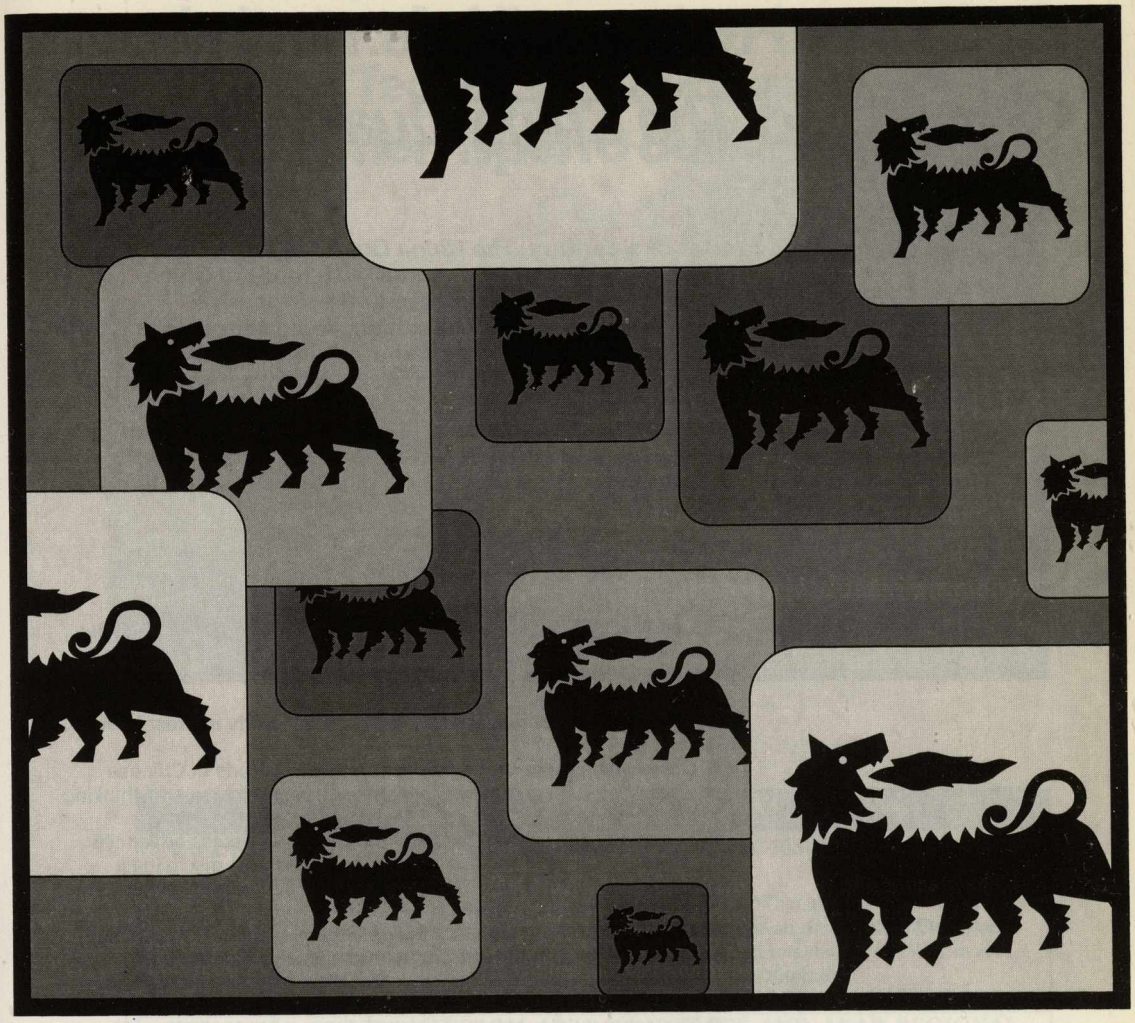

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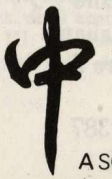

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